

Nicollet County Planning and Zoning Advisory Commission



March 15, 2021

**The meeting will begin following the adjournment of the
Nicollet County Board of Adjustment and Appeals Meeting**

Doors Open at 6:45 PM

County Board Room, Nicollet County Government Center, 501 South Minnesota Avenue, Saint Peter MN 56082

Due to the COVID-19 (coronavirus) pandemic and resulting state and federal emergency declarations and guidance about limiting unnecessary person-to-person contact, the Planning and Zoning Advisory Commission meetings will be conducted under Minnesota Statute 13D.021 – Meetings by Telephone or Other Electronic Means. Some members may participate by telephone or other electronic means.

Due to the current health pandemic, only a limited number of persons will be allowed in the meeting room at one time. Persons in attendance must maintain proper social distancing at all times while in the building.

Copies of the meeting agenda and packet are available on the Nicollet County website at:
<https://mn-nicolletcounty.civicplus.com/AgendaCenter>

Questions or comments regarding the meeting can be directed to Mandy Landkamer, Property Services Director, at 507-934-7074, or mandy.landkamer@co.nicollet.mn.us.

1. Call to Order
2. Roll Call
3. Review of Cancellations and Additions
4. Approval of Minutes: *January 25, 2021*
5. **PUBLIC HEARING PLN 21-07**
Applicant/Owner: LJ Farms, LLC
Request: Modify an existing cattle feedlot into a swine feedlot
Location: Part of the Northwest 1/4 of the Southwest 1/4 in Section 5-111-28 in New Sweden Township
Parcel Number: 08.005.0100
6. Review Permits
7. Old Business
8. Other Business
9. Communications
10. Adjourn

Mission Statement

*Providing efficient services
with innovation and
accountability.*

Leadership. Efficiency. Accountability.
Innovation. Integrity.

www.co.nicollet.mn.us

Vision Statement

*Setting the standard for providing superior
and efficient county government services
through leadership, accountability and
innovation to a growing and diverse society.*

Planning & Zoning Advisory Commission

MINUTES

JANUARY 25, 2021

7:44 PM

NICOLLET COUNTY
BOARD ROOM

BOARD MEMBERS	David Hermanson ☒ Chair	David Wendinger ☒ Vice Chair	Marie Dranttel ☒ Commissioner
	Justin Laven ☐	Ron Regenscheid ☒	Terry Morrow ☐ Commissioner, Alternate
ABSENT EXCUSED	David Hermanson ☐ Chair	David Wendinger ☐ Vice Chair	Marie Dranttel ☐ Commissioner
	Justin Laven ☒	Ron Regenscheid ☐	Terry Morrow ☐ Commissioner, Alternate
ABSENT	David Hermanson ☐ Chair	David Wendinger ☐ Vice Chair	Marie Dranttel ☐ Commissioner
	Justin Laven ☐	Ron Regenscheid ☐	Terry Morrow ☐ Commissioner, Alternate
STAFF PRESENT	Property and Public Services Director Mandy Landkamer ☒		
	Deputy Zoning Administrator/Planner Jon Hammel ☒		
	Assistant County Attorney Megan E. Gaudette Coryell ☒		

ELECTION OF OFFICERS

CHAIR

Wendinger nominated Hermanson for Chair, seconded by Regenscheid. The Commission voted unanimously to elect David Hermanson as Chair for 2021.

VICE CHAIR

Regenscheid nominated Wendinger for Vice-Chair, seconded by Hermanson. The Commission voted unanimously to elect David Wendinger as Vice-Chair for 2021.

REVIEW OF CANCELLATIONS & ADDITIONS

None.

MOTION TO APPROVE MINUTES OF NOVEMBER 16, 2020

APPROVE ☒

APPROVE WITH REVISIONS ☐

1ST	Marie Dranttel ☐	David Hermanson ☐	Justin Laven ☐	Ron Regenscheid ☐
	Terry Morrow, Alt. ☐	David Wendinger ☒	Vacant ☐	
	David Ubel ☐			
2ND	Marie Dranttel ☐	David Hermanson ☐	Justin Laven ☐	Ron Regenscheid ☐
	Terry Morrow, Alt. ☐	David Wendinger ☐	Vacant ☐	
	David Ubel ☒			
VOTE TO APPROVE MINUTES		PASS ☒	FAIL ☐	VOTE 5-0
PUBLIC APPEARANCES		None.		

Public Hearings

**NEW ULM QUARTZITE
QUARRIES, INC.**

PLN21-02

**THREE-YEAR REVIEW OF A MINERAL EXTRACTION PERMIT TO MINE,
CRUSH, PROCESS, AND STOCKPILE QUARTZITE, INCLUDING AN
ASPHALT HOT MIX PLANT AND CONCRETE BATCH PLANT**

APPLICANT COMMENT

Andrew Gieseke was present on behalf of the applicant. He had no comment.

PUBLIC COMMENT

Brenda Guldán inquired about the request prior to the meeting. She did not object to the request.

PUBLIC TESTIMONY

None.

**COMMISSIONER
DISCUSSION**

None.

MOTION

APPROVE WITH ATTACHED CONDITIONS ☒

DENY ☐

1ST Marie Dranttel ☐
Terry Morrow, Alt. ☐
David Ubel ☐

David Hermanson ☐

Justin Laven ☐

Ron Regenscheid ☐

David Wendinger ☒

Vacant ☐

2ND Marie Dranttel ☐
Terry Morrow, Alt. ☐
David Ubel ☒

David Hermanson ☐

Justin Laven ☐

Ron Regenscheid ☐

David Wendinger ☐

Vacant ☐

VOTE

PASS ☒

FAIL ☐

VOTE 5-0

MOTION TO ADOPT FINDINGS

1ST Marie Dranttel ☒
Terry Morrow, Alt. ☐
David Ubel ☐

David Hermanson ☐

Justin Laven ☐

Ron Regenscheid ☐

David Wendinger ☐

Vacant ☐

2ND Marie Dranttel ☐
Terry Morrow, Alt. ☐
David Ubel ☐

David Hermanson ☐

Justin Laven ☐

Ron Regenscheid ☒

David Wendinger ☐

Vacant ☐

VOTE TO ADOPT FINDINGS

PASS ☒

FAIL ☐

VOTE 5-0

OLD BUSINESS

Landkamer distributed copies of the approved 2020 Comprehensive Plan to the Commission.

OTHER BUSINESS

None.

REVIEW OF PERMITS

The permits for November and December were reviewed.

COMMUNICATIONS

None.

MOTION TO ADJOURN

8:01 PM

1ST Marie Dranttel ☐
Terry Morrow, Alt. ☐
David Ubel ☐

David Hermanson ☐

Justin Laven ☐

Ron Regenscheid ☐

David Wendinger ☒

Vacant ☐

2ND Marie Dranttel ☐
Terry Morrow, Alt. ☐
David Ubel ☒

David Hermanson ☐

Justin Laven ☐

Ron Regenscheid ☐

David Wendinger ☐

Vacant ☐

VOTE TO ADJOURN

PASS ☒

FAIL ☐

VOTE 5-0

DAVID HERMANSON
CHAIR

DATE

JON HAMMEL
PLANNER/DEPUTY ZONING ADMINISTRATOR

DATE

Draft



CONDITIONAL USE PERMIT

MODIFY AN EXISTING CATTLE FEEDLOT INTO A SWINE FEEDLOT

LJ FARMS, LLC

PLN21-07

**NICOLLET COUNTY
PLANNING & ZONING ADVISORY COMMISSION**

SUBJECT:	PLN21-07, Conditional Use Permit
APPLICANT:	LJ Farms, LLC
LOCATION:	Part of the Northwest 1/4 of the Southwest 1/4 in Section 5-111-28 in New Sweden Township
PARCEL NO:	08.005.0100
EXISTING ZONING:	Agricultural Preservation
HEARING DATE:	March 15, 2021

REQUEST

The applicant has submitted a request for a conditional use permit to modify an existing cattle feedlot into a proposed swine feedlot.

EXISTING LAND USE

The project involves a 202.9 acre property. The majority of the property is cropland. The property has an existing farm building site. The proposal is to split the existing building site off from the current property. The new lot would be approximately 26 acres in size. The existing building site includes a dwelling, garage, milking parlor, two loafing sheds, two machine sheds, and a granary. There are ten other structures on the property. These structures are in various states of dilapidation and the Assessor assigns them no-value.

SURROUNDING LAND USE

The surrounding land use is predominantly agricultural. The property is along the Nicollet/Sibley county line. The property is located 7.5 miles east of the City of Lafayette, 0.75 miles north of County Road 1, and 1 mile west of State Highways 22 and 111.

PROJECT DESCRIPTION

The applicant proposes to modify an existing cattle feedlot into a swine feedlot. The existing feedlot facility consists of 30 dairy heifers (21 animal units) and 44 feeder cattle (30.8 animal units) in two partial confinement barns and one 14,600 square-foot open lot without runoff controls. The total existing number of animals is 74 and the total number of animal units is 51.8. The proposal involves the removal of the existing animals from the site. It also involves the demolition and removal of existing structures, including the open lot without runoff controls.

The proposed feedlot facility would consist of 2,328 swine more than 300 pounds (931.2 animal units) and 160 swine between 55 and 300 pounds (48 animal units) in two total confinement barns with two below barn concrete tank liquid manure storage areas. The total proposed number of animals is 2,488 and the total number of animal units is 979.2.

The number of animals at the facility would increase from 74 cattle to 2,488 swine, or by a total of 2,414 animals. The number of animal units would increase from 51.8 to 979.2, or by a total of 927.4 animal units.

Animal Type	Current # of Animals and Animal Units		Proposed # of Animals and Animal Units	
	Number	A.U.	Number	A.U.
Dairy heifers	30	21	0	0
Feeder cattle	44	30.8	0	0
Swine weighing between 55 lbs. and 300 lbs.	0	0	160	48
Swine weighing more than 300 lbs.	0	0	2,328	931.2
TOTAL	74	51.8	2,488	979.2

Existing Feedlot Components*

Size	Structure Type	Animal Type	Number of Animals
55' x 70'	Partial confinement barn	Feeder cattle	30
60' x 90'	Partial confinement barn	Dairy heifers	44
14,600 sf	Open lot with no runoff controls	n/a	n/a

**These structures are to be demolished and removed as part of proposal.*

Proposed Feedlot Components*

Size	Structure Type	Animal Type	Number of Animals
132' x 330'	Total confinement barn with slatted floor	Swine weighing between 55 lbs. and 300 lbs.	160
		Swine over 300 lbs.	432
132' x 330' x 2'	Below barn concrete tank	n/a	n/a
142' 8" x 520'	Total confinement barn with slatted floor	Swine over 300 lbs.	1,896
142' 8" x 520' x 10'	Below barn concrete tank	n/a	n/a

**These structures would be new construction.*

Access:

The site has an existing access onto 481st Avenue. The road authority is New Sweden Township.

Dead Animal Disposal:

The applicant's method of disposal is to compost.

Manure Management Plan:

A Manure Management Plan has been submitted in accordance with Minnesota Rules Section 7020.2225. The applicant has 865.73 spreading acres available. Only 384 spreading acres are required per year.

Manure Handling:

The manure from the total confinement barn will be stored in the below barn concrete pits. The manure will be emptied in the fall and will be transported and incorporated in accordance with Minnesota Pollution Control Agency rules.

Septic System:

The applicant may construct an office with toilet and shower facilities as part of the project. If so, the applicant will be required to submit a sewage treatment system design. The design must be prepared by a septic system designer licensed in the State of Minnesota. If the system design is for a holding tank, the design must be accompanied by a signed pumping contract.

Setbacks:

The proposal exceeds the County's requirements for development in the AG district. The proposed setbacks are as follows:

Minimum Setbacks		
Type	Required	Proposed
Front Yard (W)	35'	455'
Side Yard (N)	20'	196'
Side Yard (S)	20'	149'
Rear Yard (E)	20'	243'
Ditch (NE)	100'	1,313
OFFSET Odor Modeling 93% to non-associated dwelling (NW)	2,909'	3,012'
OFFSET Odor Modeling 99% to City of Lafayette (W)	2.7 miles	7.5 miles

Solid Waste:

The solid waste associated with the demolition and removal of the existing structures, and with the construction of the new structures, must be disposed of in accordance with the Nicollet County Solid Waste Ordinance and Minnesota Pollution Control Agency standards and requirements.

MINNESOTA POLLUTION CONTROL AGENCY STANDARDS

The project met the large concentrated animal feeding operation (CAFO) threshold for issuance of a state permit. The threshold is 2,500 or more swine weighing 55 pounds or more. The proposal is for 2,488 swine weighing more than 55 pounds and does not meet the aforementioned threshold as a CAFO. The applicant would be applying for a Construction Short Form Permit through Nicollet County.

NEIGHBOR NOTIFICATION

Property owners were notified of the request per the standards of Section 505 of the Zoning Ordinance and Minnesota State Statute 394.26.

CONDITIONAL USE PERMIT CRITERIA

- 1. Given the nature of the land, the requested use is compatible with the general welfare, public health and safety.**

True, because:

- The proposed facility meets the applicable standards of Sections 505, 602, and 715 of the Zoning Ordinance for feedlots in the Agricultural Preservation zoning district.
- The size and design of the barn appears to be typical of feedlot developments within the county.
- The proposal appears to meet the applicable Minnesota Pollution Control Agency standards for swine feedlots.

- 2. The requested use will not create an unreasonably excessive burden on the existing roads or utilities.**

True, because:

- The site contains an existing cattle feedlot.
- The size and function of the proposed facility is not unreasonable for the surrounding infrastructure.
- It appears the existing public infrastructure is suited for agricultural development.

- 3. The requested use is compatible with the surrounding area and will not significantly depreciate nearby properties.**

True, because:

- The location is within a predominantly agricultural area.
- The proposal meets the required OFFSET setback from neighboring dwellings.

- 4. The structure and the use shall have an appearance that will not have an unreasonably adverse effect on nearby properties.**

True, because:

- The predominant land use in the area is agricultural in nature.
- The barn size and function appears to be typical of feedlot development within the county.

- The proposal meets all applicable setbacks, including the front, side, and rear yard and OFFSET setbacks.
- The proposal involves the removal of existing dilapidated structures (e.g. cattle barns, machine sheds, dwelling, etc.).

5. The requested use is consistent with the Nicollet County Land Use Ordinances.

True, because:

- The requested use meets the applicable setbacks, standards, and requirements found in Sections 505, 602, and 715 of the Zoning Ordinance for feedlots in the Agricultural Preservation zoning district.

6. The requested use is not in conflict with the Nicollet County Comprehensive Plan.

True, because:

- The plan notes the importance of agriculture to the county and to the local economy.
- The proposal is for an agricultural use within an existing agricultural area.

7. The requested use will not create an unreasonably adverse effect because of noise, odor, glare, or general unsightliness, for nearby property owners.

True, because:

- The barn will be of a size and function that is typical for a swine feedlot.
- The proposal meets the required OFFSET setback.
- The applicable county and state standards for manure handling and manure management will be met.
- The existing dilapidated structures (e.g. cattle barns, dwelling, etc.) will be removed from the property and disposed of in accordance with Minnesota Pollution Control Agency standards and the Nicollet County Solid Waste Ordinance.

8. The requested use is reasonably related to the existing land use and environment.

True, because:

- The property already contains a feedlot.
- The surrounding land use is predominantly agricultural.
- The site is located in an existing farm landscape.

9. There are no apparent unreasonable health risks posed to neighbors or the public in general.

True, because:

- The site meets the required OFFSET setback to nearby non-associated residences.
- The proposal will meet the applicable county and state standards for manure handling and management.
- The facility will follow Board of Animal Health regulations for the disposal of dead animals.

10. The requested use will/will not have an adverse effect upon public health, safety and welfare due to the following other factors:

Will Not – True, because:

- The request is proposed to meet the standards for feedlots in the Agricultural Preservation zone, with no apparent adverse effects to the public health, safety, and welfare.

RECOMMENDATIONS

Staff suggests that if the request is recommended for approval, the following conditions be attached:

1. The applicant undertakes the project according to the plans and specifications submitted to the county with the application.
2. The zoning permit is invalid if the holder has not substantially completed the building within the period of time allowed on the zoning permit connected with this conditional use permit.
3. The conditional use permit will be periodically reviewed by the county to ensure compliance with the permit and permit conditions.
4. The county may enter onto the premises at reasonable times and in a reasonable manner to ensure the permit holder is in compliance with the conditions and all other applicable statutes, rules, and ordinances.
5. The applicant must provide, maintain, and follow an approved manure management plan under the guidelines set forth in Minnesota Rules Chapter 7020.2225.
6. Manure that is in liquid or slurry form is to be injected or spread and incorporated within 24 hours of spreading.

7. Manure when transported by truck/spreader to fields off site must be covered or in a leak proof tank to avoid any potential manure spills on public roads.
8. If required, the applicant must obtain a Department of Natural Resources Division of Waters' Water Appropriations Permit.
9. Dead animals must be disposed of in accordance with the Board of Animal Health regulations.
10. The applicant must notify Property Services at least three days prior to start of construction, including any related earth work.
11. If required, a Construction Stormwater permit must be obtained prior to start of construction.
12. Before construction begins, the applicants must have the appropriate county feedlot and zoning permits in hand.
13. The approved feedlot permit application, conditional use permit, and supporting information will remain on file with Property Services.
14. The applicants must maintain the described and necessary technology to meet the 93% and 99% OFFSET Annoyance Free Odor Rating.
15. An approved sewage treatment system design, prepared by a septic system designer licensed in the State of Minnesota, must be on file with Property Services prior issuance of a zoning permit for an office with toilets, sinks or shower facilities. If the system design is for a holding tank, the design must be accompanied by a signed pumping contract with a State licensed septic maintainer. The installation of the system must be completed before the facility starts operating.
16. Any solid waste associated with the removal of the existing structures must meet all applicable regulations for the disposal of solid waste, including the Nicollet County Solid Waste Ordinance and Minnesota Pollution Control Agency Rules.
17. Any unfilled bore holes associated with the proposed construction must be sealed prior to issuance of the zoning permit connected with this conditional use permit.

Parcel No: 08.005.0100
Map No: 0605100001

Applicant/Landowner: LJ Farms, LLC

PLN21-07

ATTACHMENT A Application

ATTACHMENT B Criteria for Conditional Use Permit

ATTACHMENT C Location Map

ATTACHMENT D Aerial

D.1 Large Aerial

D.2 Small Aerial

ATTACHMENT E Neighbor Notification List

ATTACHMENT F Documents Submitted by Applicant

F.1 Permission Statement

F.2 Site Plan

F.3 MPCA Permit Application

F.4 Geotechnical Report

F.5 Manure Storage Manual

F.6 Pit Plans

ATTACHMENT G OFFSET Model

ATTACHMENT H Assessor Diagram



PROPERTY SERVICES DIVISION
501 SOUTH MINNESOTA AVENUE, SAINT PETER MN 56082
507-934-7070

PLANNING & ZONING ADVISORY COMMISSION
APPLICATION

Total Fees: \$446.00

Map#: 0605100001
Parcel#: 080050100
Permit#: PLN21-00007
Date: February 23, 2021

Applicant: Lincoln Langhorst, LJ Farms, LLC, 410 Main Avenue E, Gaylord MN 56334
Phone: 237-5581
Owner: HERMEL FARMS LLC, 524 N 7TH ST, SAINT PETER MN 56082
Property Address: 34701 481ST AVE, GAYLORD MN 55334
Abbreviated Legal Description: NW 1/4 ACRES 162.59 NW 1/4 OF SW 1/4 ACRES 40.00
Township: New Sweden Township

Record Type: Conditional Use
Category: Feedlot

Project Description: To modify an existing cattle feedlot into a swine feedlot with the construction of two total confinement swine barns (132' x 330' and 142'8" x 520') with two below barn concrete tank liquid manure storage areas (132' x 330' x 2' and 142'8" x 520' x 10'). The total proposed number animal units will increase from 51.8 to 979.2. This includes 2,328 swine more than 300 pounds (931.2 animal units) and 160 swine between 55 and 300 pounds (48 animal units). The project includes the removal of two partial confinement cattle barns (55' x 70' and 60' x 90') and one 14,600 square-foot open lot without runoff controls. Ref. Zoning Ordinance 505, 602.3, 715.

Planning Commission Hearing Date: 03/15/2021
Board of Commissioners Date: 03/23/2021



APPLICANT SIGNATURE

2-23-21
DATE

ATTACHMENT A
Application



**NICOLLET COUNTY PLANNING AND ZONING ADVISORY COMMISSION
CRITERIA FOR GRANTING A CONDITIONAL USE PERMIT**

Name of Applicant/ L J Farms, LLC
Property Owner:
Use Requested: Modify an existing cattle feedlot into a swine feedlot

Date: March 15, 2021
File: PLN21-07

FINDINGS OF FACT

Authority for issuance of conditional use permits is derived from Minnesota State Statute §394.301 and Nicollet County Zoning Ordinance, Section 505. The conditional use must maintain the health, safety, morals, and general welfare of the community.

1. Given the nature of the land, the requested use is compatible with the general welfare, public health and safety.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

2. The requested use will not create an unreasonably excessive burden on the existing roads or utilities.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

3. The requested use is compatible with the surrounding area and will not significantly depreciate nearby properties.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

ATTACHMENT B
Criteria for Conditional Use Permit

4. The structure and the use shall have an appearance that will not have an unreasonably adverse effect on nearby properties.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

5. The requested use is consistent with the Nicollet County Land Use Ordinances.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

6. The requested use is not in conflict with the Nicollet County Comprehensive Plan.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

7. The requested use will not create an unreasonably adverse effect because of noise, odor, glare, or general unsightliness, for nearby property owners.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

8. The requested use is reasonably related to the existing land use and environment.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

9. There are no apparent unreasonable health risks posed to neighbors or the public in general.

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

10. The requested use will/will not (Circle One) have an adverse effect upon public health, safety and welfare due to the following other factors:

Marie Dranttel	☐ YES	☐ NO	WHY: _____
David Hermanson	☐ YES	☐ NO	_____
Justin Laven	☐ YES	☐ NO	_____
Ron Regenscheid	☐ YES	☐ NO	_____
David Ubel	☐ YES	☐ NO	_____
David Wendinger	☐ YES	☐ NO	_____

**SPECIAL CONDITIONS ARE LISTED
ON THE RECORDED CONDITIONAL USE PERMIT AND IN THE RECORD**

**THE NICOLLET COUNTY PLANNING AND ZONING ADVISORY COMMISSION:
(APPROVES _____) (DENIES _____) THE REQUESTED CONDITIONAL USE PERMIT**

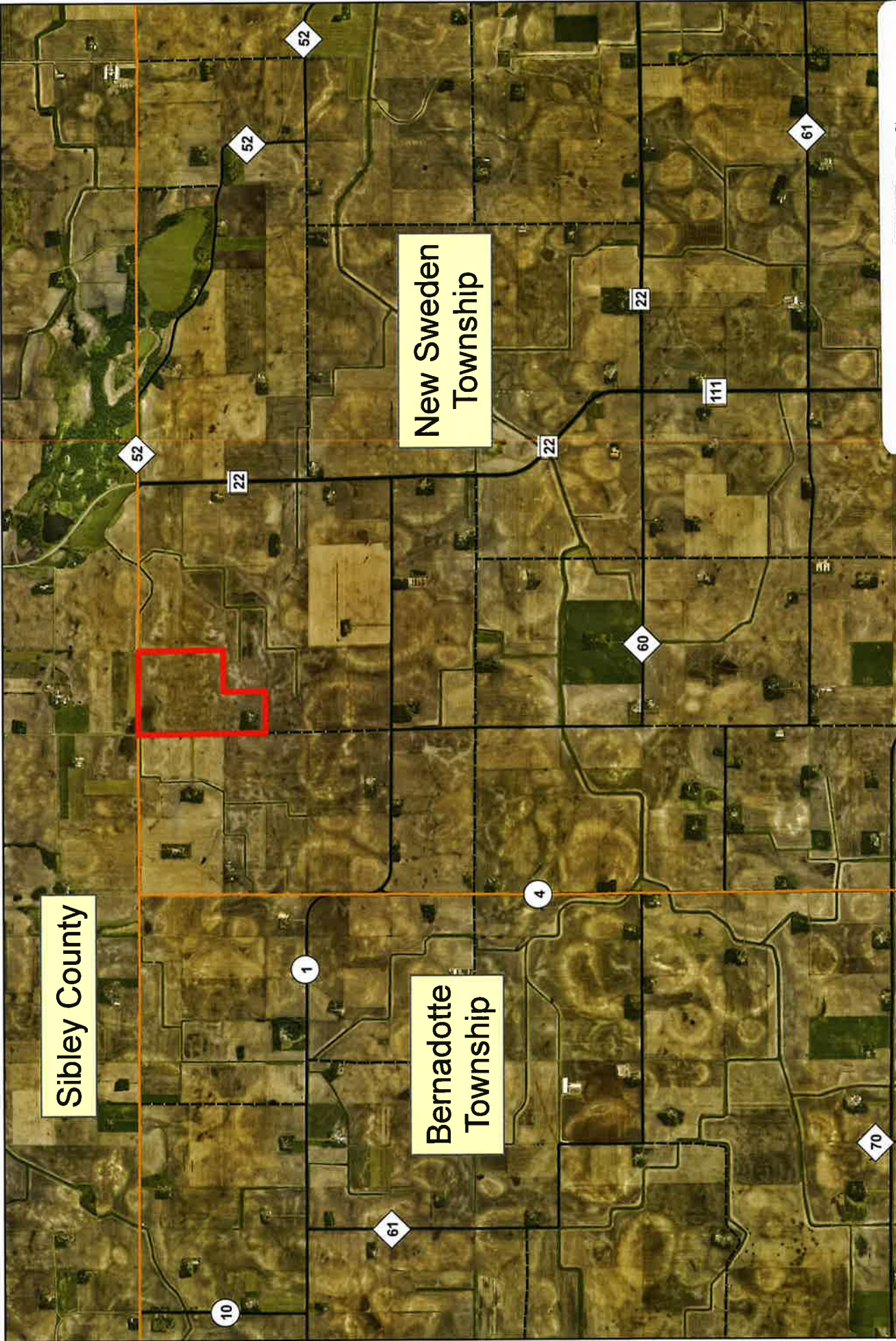
This decision is based on:

_____ Application	_____ Viewed by Members of Commission:
_____ Staff report	
_____ Pictures	
_____ Information received at public hearing	

Dranttel _____	Regenscheid _____
Hermanson _____	Ubel _____
Laven _____	Wendinger _____

Facts supporting the answer to each question above are hereby certified to be the Findings of the Nicollet County Planning and Zoning Advisory Commission.

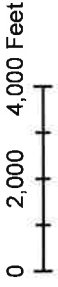
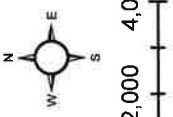
Date: _____ Chair: _____



ATTACHMENT C
Location Map

Legend

-  L J Farms
-  Township Boundary



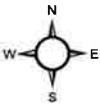
1:50,000 1 inch = 4,167 feet

Disclaimer: The information herein is intended to be a true representation of available records. However, there is no guarantee to the user as to the accuracy, suitability, or reliability of this data for any purpose. The Property Services Division of Nicollet County assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data.



ATTACHMENT D.1
Large Aerial

Disclaimer: The information herein is intended to be a true representation of available records. However, there is no guarantee to the user as to the accuracy, suitability, or reliability of this data for any purpose. The Property Services Division of Nicollet County assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data.



0 250 500 Feet

1:6,000 1 inch = 500 feet



Proposed
New Lot
(orange)

Proposed
Construction
(yellow)

Disclaimer: The information herein is intended to be a true representation of available records. However, there is no guarantee to the user as to the accuracy, suitability, or reliability of this data for any purpose. The Property Services Division of Nicollet County assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data.



0 150 300 Feet

1:3,600 1 inch = 300 feet

ATTACHMENT D.2 Small Aerial

AMRY LANGHORST REV TRUST
410 MAIN AVE E
GAYLORD MN 55334

BLUESTEM LAND LLC
42505 COUNTY ROAD 15
SAINT PETER MN 56082

DORIS KADUCE TRUST
1927 ROCK RIDGE LN
SAINT PETER MN 56082

GALEN HANSCH
1305 NORETTA DR
NORTH MANKATO MN 56003

HERMEL FARMS LLC
524 N 7TH ST
SAINT PETER MN 56082

JOHN VANDER LOUW
5680 DEER TRL
WOODBURY MN 55129

LARRY VANDER LOUW
917 S BROADWAY
NEW ULM MN 56073

LINDA & GREGORY REINERT
34318 481ST AVE
GAYLORD MN 55334

MEYER FAMILY LLLP
30924 STATE HWY 22
GAYLORD MN 55334

RONALD & JEANNE BRUSS
34541 491ST AVE
LAFAYETTE MN 56054

STEVEN & BONNA GOSTOMCZIK
524 N 9TH ST
SAINT PETER MN 56082

SUSAN SCHOTT
34472 STATE HWY 22
GAYLORD MN 55334

NEW SWEDEN TOWN BOARD
36329 STATE HIGHWAY 22
NICOLLET MN 56074

ATTACHMENT E
Neighbor Notification List

To Whom It May Concern:

Hermel Farms, LLC, is the current owner of certain real property that is located in Nicollet County, Minnesota, and is legally described as follows:

the South 858 feet of the Northwest Quarter of the Southwest Quarter of Section 5, Township 111 North, Range 28 West, Nicollet County, Minnesota (comprising 26.0 acres, more or less)

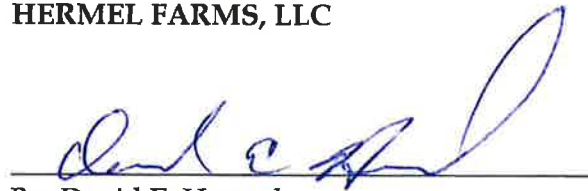
(the "Building Site"). The Building Site is currently part of a larger parcel of real property that is identified as Parcel ID No. 08.005.0100.

Hermel Farms, LLC, has entered into an Exchange Agreement dated February 19, 2021, pursuant to which it has agreed to convey the Building Site to LJ Farms, LLC. In anticipation of this conveyance, Hermel Farms, LLC, hereby grants permission to LJ Farms, LLC, and/or Wakefield Pork, Inc., to apply for a conditional use permit to construct and operate a hog feedlot on the Building Site.

The registered office for Hermel Farms, LLC, is located at 100 Oak Terrance Court, North Mankato, MN 56003.

Thank you for your attention concerning this matter.

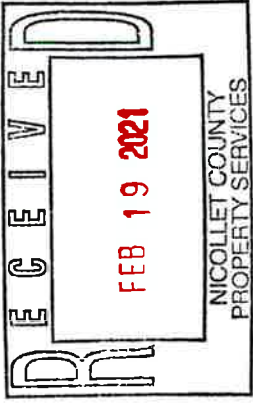
HERMEL FARMS, LLC



By: David E. Hermel
Its: Manager

Dated: February 19, 2021

ATTACHMENT F.1
Permission Statement



Lincoln Langhast LLC 2-19-21

ATTACHMENT F2
Site Plan



520 Lafayette Road North
St. Paul, MN 55155-4194

Animal feedlot or manure storage area permit application

CSF and Interim Permit Program

Doc Type: Permit Application

Applicability: Use this form to obtain, modify, or extend the term of a construction short form (CSF) or interim permit.
Keep a copy of this application form and all submittals for your records.

After completing and signing this form, submit it and any required enclosures as instructed below:

For facilities located in a delegated county, send the signed form and any enclosures to the County Feedlot Officer (CFO).
All other facilities must submit this form and any enclosures to the Minnesota Pollution Control Agency (MPCA) as follows:

- Scan and email the signed form and any enclosures to FeedlotSubmittal.pca@state.mn.us.
- If submission via email is not possible, you can mail the signed form and any enclosures to:

Attn: Feedlot Master File Staff
Minnesota Pollution Control Agency
18 Wood Lake Drive SE
Rochester, MN 55904

I. Permit type and reason for application

Feedlot Registration Number: 103-97796

Please indicate which type of feedlot permit you are applying for (*choose only one*):

- ☒ Construction Short Form ☐ Interim (correcting a pollution hazard)

Please indicate the reason for the permit application (*choose only one*):

- ☒ New Permit
(No existing CSF or interim permit)
- ☐ Permit Modification
(Changes to sites with an existing CSF or interim permit)
- ☐ Permit Extension - Current CSF or Interim Permit number: _____
(Work not completed prior to permit expiration)

Indicate below the reason(s) the work may not be completed prior to permit expiration

Estimated amount of time required to complete the work: _____ ☐ days ☐ months

Note: The length of the extension is limited to 24 months for CSF permits and 90 days for Interim permits

A permit extension request only requires completion of pages 1 and 6 of this application form (the remaining pages can be left blank).

Note: When the notice to neighbors and property owners is applicable (page 6) the content of the notice must include the date the original permit was issued and the new proposed completion date as well as the normally required information.

II. Owner's name(s) and address(es) - (All partners of a Limited Liability Partnership (LLP) must be listed.)

Primary owner – Will be used as the mailing address

Additional owner – attach additional sheets as necessary

Name: LJ Farms, LLC

Name: _____

Address: 410 Main Ave E

Address: _____

City: Gaylord

State: MN

City: _____

State: _____

Phone: 507-237-5581

Zip: 55334

Phone: _____

Zip: _____

Email: _____

Email: _____

Note: The term owner includes all persons having possession, control, or title to an animal feedlot or manure storage area (including lessees or renters). All owners must be listed. Attach to this application the names, addresses, and phone numbers of all additional owners.

III. Facility name and site address

Site Name: Willow Tree

☐ Facility is a MN Ag Water Quality Certified Farm (MAWQCP)

Complete if facility address is different than the primary owner address:

Street: 34701 481st Ave

City: Gaylord

State: MN

Phone: _____

Zip: 55334

Contact person for day-to-day activities

Name: Todd Marotz

Street: 410 Main Ave E

City: Gaylord

State: MN

Phone: 507-237-5581

Zip: 55334

Cell phone: 507-276-5564

Email: Todd_Marotz@wakefieldpork.com

(General letters/notices may be sent by email where one is indicated.)

IV. Facility location

County: NicolletTownship name: New Sweden

Township (26 – 71 or 101 – 168)	Range (1 – 51)	Section (1 – 36)	¼ Section (160 acre) (NW, NE, SW, SE)	¼ of ¼ Section (40 acre) (NW, NE, SW, SE)
T 111 N	R 28 W	5	SW	NW

V. Sensitive features

1. Is any part of the facility within 1,000 feet of any type of surface waters or tile intake? ☐ Yes ☒ No

If Yes, select all types below

☐ Lake ☐ River ☐ Stream (Perennial or Intermittent) ☐ Tile Intake
☐ Pond ☐ Creek ☐ Ditch ☐ Wetland ☐ Calcareous Fen ☐ Unknown

2. Is any part of the facility located within 300 feet of a river/stream? ☐ Yes ☒ No

3. Is any part of the facility located within a delineated flood plain (100 year flood)? ☐ Yes ☒ No

4. Is any part of the facility located within designated shoreland? ☐ Yes ☒ No

5. Is any part of the facility located within 1,000 feet of a karst feature? ☐ Yes ☒ No
(sinkholes, caves, disappearing springs, resurgent springs, karst windows, dry valleys, or blind valleys)

If Yes, complete a. and b. below:

- a. Are there 4 or more sinkholes within 1,000 feet? ☐ Yes ☐ No

- b. Is any part of the facility within 300 feet of a known sinkhole? ☐ Yes ☐ No

6. Is any part of the facility located within 1,000 feet of the following types of wells: ☐ Yes ☒ No

If Yes, select the applicable well type below:

- ☐ a community water supply well
☐ a well serving a public school as defined under Minn. Stat. § 120A.05
☐ a well serving a private school excluding home school sites
☐ a well serving a licensed child care center where the well is vulnerable (Minn. R. 4720.5550, subp. 2)

VI. Environmental Review (complete when construction or expansion is proposed)

Mandatory environmental review is required when the addition of 1,000 or more animal units (AU) is proposed as part of the construction/expansion at any facility. The threshold when environmental review is mandatory is reduced to 500 AU when any part of the facility is located within a "sensitive area". The facility is within a sensitive area when any of the following apply.

- Any part of the facility is within a delineated floodplain (yes to question 3 above)
- Any part of the facility is within designated shoreland (yes to question 4 above)
- Any part of the facility is within 1,000 feet of a karst feature (yes to question 5 above)
- Any part of the facility is within a vulnerable drinking water supply management area
- Any part of the facility is within a federal, state, or local wild and scenic river district
- Any part of the facility is located within the Minnesota River Project Riverbend area or the Mississippi headwaters area

Additionally mandatory environmental review is required for "Phased actions". Phased actions are defined under Minnesota law (Minn. R. ch. 4410) as two or more projects located in the same geographic area and constructed sequentially within three years of each other by the same proposer. When this is the case, the animal units from all projects are combined to determine if environmental review is required. The following will assist the MPCA to evaluate if your project qualifies as a "phased action".

Do you have ownership interest in another livestock operation that was constructed/expanded within the past three years or are you substantially certain you will be constructing/expanding another livestock operation within the next three years?

☐ Yes ☒ No

If Yes, how far away (straight-line distance) is it located from the project proposed in this application? _____ miles

There are also rule provisions to require completion of the environmental review process in the event of a citizen petition or upon the discretion of the MPCA. Please see the MPCA fact sheet entitled "[When is Environmental Review Required for Feedlots](#)" (available on the MPCA website at <https://www.pca.state.mn.us/quick-links/environmental-review> and/or Minn. R. 4410 for further details.

VII. Animal numbers and animal unit (AU) calculation

Complete the table below to identify the **maximum** number of animals housed at that facility. All animal numbers and animal sizes used to complete this table should reflect the animal holding **capacity** of the facility even if the facility does not currently house or propose to house that number of animals. At no time is the number of animals at the facility allowed to exceed the capacity provided below without first obtaining a permit or permit modification.

Current Capacity - List the current head count **capacity** for each animal type in column 3 below. For sites with a permit, this should match the currently permitted number of animals. Next, multiply the AU Factor in column 2 by the number of animals listed in column 3 to get the *Current AU Capacity* for each animal type (column 4). Finally, add together all AU's in column 4 to get a total at the bottom of the chart. *If this application is for a brand-new feedlot site leave columns 3 and 4 blank. (ie. bare piece of ground)*

Final Capacity - List the final head count **capacity** for each animal type in column 5 below. This number should include current animals plus or minus any expansion or reduction in each animal type. This should reflect the maximum AU capacity requested with this permit application. Next, multiply the AU Factor in column 2 by the number of animals listed in column 5 to get the *Final AU Capacity* for each animal type (column 6). Finally, add together all AU's in column 6 to get a total at the bottom of the chart.

1. Animal type	2. Animal unit factor	Current facility capacity		Final facility capacity (Current +/- Changes)	
		3. Head count	4. Animal units = column 2 x column 3	5. Head count	6. Animal units = column 2 x column 5
A. Dairy cattle					
Mature cow (milked or dry) over 1,000 lbs.	1.4				
Mature cow (milked or dry) under 1,000 lbs.	1.0				
Heifer	0.7	30	21		
Calf	0.2				
B. Veal					
Veal	0.2				
C. Beef cattle					
Slaughter steer/heifer, stock cow, or bull	1.0				
Feeder cattle (stocker or backgrounding), heifer	0.7	44	30.8		
Cow and calf pair	1.2				
Calf (weaned)	0.2				
D. Swine					
Over 300 lbs.	0.4			2328	931.2
Between 55 and 300 lbs.	0.3			160	48
Under 55 lbs.	0.05				
E. Horses					
Horse	1.0				
F. Sheep					
Sheep or Lamb	0.1				
G. Chickens with a liquid manure system					
Layer Hens or Broilers	0.033				
H. Chickens with a dry manure system					
Broilers over 5 lbs.	0.005				
Broilers under 5 lbs.	0.003				
Layer Hens over 5 lbs.	0.005				
Layer Hens under 5 lbs.	0.003				
I. Turkeys					
Over 5 lbs.	0.018				
Under 5 lbs.	0.005				
J. Ducks					
Duck (with a liquid manure handling system)	0.01				
Duck (with a dry manure handling system)	0.01				
K. Animals not listed in A to J (AU factor in column 2 = average weight of the animal type divided by 1,000 lbs.)					
Animal type:					
Total animal unit capacity			Current AU capacity		Final AU capacity
Add all numbers in column 4 for Current AU total			51.8		979.2
Add all numbers in column 6 for Final AU total					

VIII. Animal holding areas

Complete the table below for all your animal holding areas.

If you have more than six animal holding areas on your site, continue your list on an additional copy of this page.

Animal holding area ID

List each animal holding area in a separate column

Facility Site Sketch ID (i.e., #1, A, Barn 1)	1	2	4	5		
Status: (check one box only) Proposed - not permitted previously Approved - permitted but not yet operational Existing - current operational component Modifying - change to a permitted component	☒ Proposed ☐ Approved ☐ Existing ☐ Modifying ☐ Eliminating	☒ Proposed ☐ Approved ☐ Existing ☐ Modifying ☐ Eliminating	☐ Proposed ☐ Approved ☐ Existing ☐ Modifying ☒ Eliminating	☐ Proposed ☐ Approved ☐ Existing ☐ Modifying ☒ Eliminating	☐ Proposed ☐ Approved ☐ Existing ☐ Modifying ☒ Eliminating	☐ Proposed ☐ Approved ☐ Existing ☐ Modifying ☐ Eliminating
Distance to nearest well (ft.)	>100'	>100'	180'	140'		
Pasture Access	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No

Type of animal holding areas (indicate dimensions and floor type)

Write approximate dimensions in feet in the space below
(width x length or area with units for irregular shapes)

Total confinement barn (slatted floor)	132' x 330'	142'8" x 520'				
Total confinement barn (solid floor)						
Partial confinement barn			60' x 90'	55' x 70'		
Open lot with runoff controls						
Open lot without runoff controls			77' x 95'	77' x 95'		
Animal Holding Area Floor Type (check all that apply)	☒ Concrete ☐ Asphalt ☐ Soil ☐ Other	☒ Concrete ☐ Asphalt ☐ Soil ☐ Other	☐ Concrete ☐ Asphalt ☒ Soil ☐ Other	☐ Concrete ☐ Asphalt ☒ Soil ☐ Other	☐ Concrete ☐ Asphalt ☐ Soil ☐ Other	☐ Concrete ☐ Asphalt ☐ Soil ☐ Other

Indicate the maximum capacity (number of animals) of each animal holding area
The total number of all animals listed should match the final animal numbers listed on page 3.

Animal numbers

Mature dairy cows (over 1,000 lbs.)						
Mature dairy cows (under 1,000 lbs.)						
Dairy heifers				30		
Dairy calves						
Veal						
Slaughter steer/heifer, stock cow or bull						
Feeder cattle-stocker/background/heifer			44			
Cow and calf pair						
Beef calves (weaned)						
Swine over 300 lbs.	432	1896				
Swine between 55 and 300 lbs.	160					
Swine under 55 lbs.						
Horses						
Sheep or lamb						
All chickens with liquid manure system						
Broiler chickens over 5 lbs. - dry system						
Broiler chickens under 5 lbs. - dry system						
Laying hens over 5 lbs. - dry system						
Laying hens under 5 lbs. - dry system						
Turkeys - over 5 lbs.						
Turkeys - under 5 lbs.						
Ducks						
Other:						

IX. Manure handling, feed storage, and dead animal areas

Complete the table below for your manure storage, feed/silage storage areas and dead animal disposal areas on your site. If you have more than six manure storage, feed/silage storage, and dead animal management areas on your site, continue your list on an additional copy of this page.

Manure, feed, or dead animal areas	List each manure handling, feed storage, and dead animal area in a separate column					
Facility Site Sketch ID (i.e., #1, A, Basin 1)	1	2	3	4	5	
Status: (check one box only)	☒ Proposed	☒ Proposed	☒ Proposed	☐ Proposed	☐ Proposed	☐ Proposed
Proposed - not permitted previously	☐ Approved	☐ Approved	☐ Approved	☐ Approved	☐ Approved	☐ Approved
Approved - permitted but not yet operational	☐ Existing	☐ Existing	☐ Existing	☐ Existing	☐ Existing	☐ Existing
Existing - current operational component	☐ Modifying	☐ Modifying	☐ Modifying	☐ Modifying	☐ Modifying	☐ Modifying
Modifying - change to a permitted component	☐ Eliminating	☐ Eliminating	☐ Eliminating	☒ Eliminating	☒ Eliminating	☐ Eliminating
Distance to nearest well (ft.)	>100'	>100'	>100'	180'	140'	
Type of liquid manure or process wastewater storage/treatment areas (indicate dimensions)	Write approximate top dimensions in feet in the space below (width x length x depth or volume with units for irregular shapes)					
Earthen or GCL lined basin						
Below barn concrete tank	132'x330'x2'	142'8"x520'x10'				
In-ground concrete tank/basin (outdoor)						
Above-ground concrete tank						
Synthetic lined (HDPE, EPDM, etc.) basin						
Steel tank (i.e., slurry-store)						
Composite lined (2 liner types) basin/tank						
Vegetated Infiltration Area						
Other (describe):						
Type of solid manure, feed storage, and dead animal areas (indicate dimensions and floor type)	Write approximate dimensions in feet in the space below (width x length or area with units for irregular shapes)					
Permanent Stockpile						
Dead Animal Management Area			50' x 80'			
Covered Feed Storage Area						
Uncovered Feed Storage Area						
Sweet Corn Silage Storage						
Storage Pad Area						
Tonnage on site at any one time						
Other (describe): manure pack on floor				60'x90'x1'	55'x70'x1'	
Stockpile, Feed Storage, or Mortality Area Floor/Liner Type (check all that apply)	☐ Concrete ☐ Asphalt ☐ Soil ☐ Other	☐ Concrete ☐ Asphalt ☐ Soil ☐ Other	☒ Concrete ☐ Asphalt ☐ Soil ☐ Other	☐ Concrete ☐ Asphalt ☐ Soil ☐ Other	☐ Concrete ☐ Asphalt ☐ Soil ☐ Other	☐ Concrete ☐ Asphalt ☐ Soil ☐ Other

X. Changes to groundwater monitoring plan (complete only if applicable)

If groundwater monitoring is required at the facility, this application can request changes to the MPCA-approved groundwater monitoring plan. In order to request changes to the groundwater monitoring plan, please indicate the type of change requested.

- ☐ Elimination of monitoring ☐ Change to sampling frequency
☐ Change to sample testing protocol ☐ Other

When a change is requested, please include with this permit application documentation from a qualified professional that provides a technical analysis and justification for the requested changes.

XI. Non-delegated county public meeting minutes (complete only if applicable)

A county which has not accepted delegation of the feedlot program must hold a public meeting prior to issuance of a feedlot permit by the MPCA for an animal feedlot with a capacity of 300 or more animal units.

Date meeting has occurred or is scheduled to occur: _____

Verification of public meeting.

A copy of the meeting minutes must be provided to the MPCA for verification of completion prior to permit issuance.

XII. 500 or more AU: Notice to residents and property owners within 5,000 feet

When required. A notice is required in *either* of the following situations:

- **Construction of a new** feedlot, or manure storage area, which will have a capacity of 500 AU or more.
- **Expansion of an existing** feedlot, or manure storage area, which currently has, or will have upon completion of the expansion, a capacity of 500 AU or more.

Notice methods. The owner shall not less than 20 business days before the anticipated issuance date of the permit, provide notice to each resident and each owner of real property within 5,000 feet of the perimeter of the proposed facility. This notice *must* include, at a minimum, the information provided in Minn. R. 7020.2000, subp.4.

An example notice can be found in the factsheet *Permit Notification Requirements – Feedlots with more than 500 Animal Units* available on the MPCA website <https://www.pca.state.mn.us/sites/default/files/wq-f3-09.pdf>.

Verification of notice. The MPCA must verify that this notice has been completed prior to permit issuance. Documentation that this notice has been completed can be provided with the permit application (preferred) or submitted at a later date, prior to permit issuance.

When the notice has been completed prior to this application

Please include with this application one of the following to provide verification that the required notice has been completed:

- An affidavit of publication from a newspaper of general circulation used to provide this notification.
- A list of all parties, with their location, that were notified by certified mail and copies of all signed mail return receipts.
- A list of all parties, with their location, that were personally visited with a date and signature from each party and certification signed by a notary public indicating in detail what was discussed.

When the notice has not been completed prior to this application

Please include with this permit application both of the following:

- A copy of the content of the notification
- Date notification is scheduled to occur: TBD

Note: The permit cannot be issued prior to receiving verification that the notice has actually taken place.
This verification must be one of the three items listed above.

XIII. Certifications and signature

Notification to local officials

The Applicant certifies that, if the application includes construction of a new facility or expansion of an existing facility, all local zoning authorities have been notified in accordance with Minn. R. 7020.2000 subp. 5.

Construction Stormwater (CSW) Requirements

The Applicant certifies that, if construction will disturb 5 or more acres, they have made a separate application for a CSW permit. For construction activities that disturb at least 1 acre but less than 5 acres, the Applicant certifies to comply with the requirements of the current CSW NPDES general permit (Minn. R. 7090.2020 provides permit coverage even though no application has been made).

Need for NPDES or SDS permit

If the MPCA determines that a NPDES or SDS permit is required, the Applicant certifies that this application will serve as an application for a NPDES or SDS permit, as appropriate. The Applicant agrees to submit additional information, as requested by the MPCA, in order to complete the NPDES or SDS permit application process including payment of the applicable permit application fee.

Applicant Signature

I hereby certify that the design, construction, and operation of the facility will be in accordance with this application and plans, specifications, reports, and related communications approved by the MPCA, and in accordance with applicable permit conditions or regulations/standards of the MPCA. I also certify under penalty of law that this document and all attachments were prepared under my direction or supervision and the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The person that signs this application must be one of the following:

- A. For a corporation, a principal executive officer of at least the level of vice president
- B. For a partnership, a general partner
- C. For a sole proprietorship, the proprietor

Print name: Lincoln Langhorst Print official title: Owner
Office phone: 507-237-3581 Cell phone: 612-756-4832
Signature: [Signature] Date: 2-19-2021

To sign up for electronic communications including the MPCA feedlot newsletters, please go to the MPCA website at <https://public.govdelivery.com/accounts/MNPCA/subscriber/new>.

Required enclosures (Permit applications submitted without all required enclosures are incomplete.)

All forms are available on the [CSF & Interim permits](https://www.pca.state.mn.us/feedlots) page of the MPCA feedlot program website at:
<https://www.pca.state.mn.us/feedlots>

- ☐ A. A site sketch/aerial photograph indicating the location of the existing and proposed facility components.
- ☐ B. A Manure/Nutrient Management Plan (MMP) – The following are optional forms to assist with MMP development:

When **all** manure is transferred to another entity for utilization, complete a MMP using the form:

[MMP requirements when ownership of manure is transferred.](#)

When **any** portion of manure is applied to land owned, rented, or leased by the applicant(s), or applied to other land where nutrient application decisions are made by the applicant(s), complete a MMP using the spreadsheet form:

[MPCA Manure Management Planner.](#)

Notes: The MMP requirements when ownership of manure is transferred form is incorporated into the spreadsheet to account for instances when only some of the manure is transferred.

A hand-entry version of the [MPCA Manure Management Planner.](#)

- ☐ C. Plans and Specifications for construction, modification, or expansion of any liquid manure storage area.
- ☐ D. **Conditional** - Environmental Assessment Worksheet (EAW) Fee

When the project requires environmental review **and** is located in a county that has not accepted delegation of the county feedlot program, there is a fee of \$4,650 for processing of an Environmental Assessment Worksheet (EAW) that must be included with this permit application. (**Check payable to:** Minnesota Pollution Control Agency)

- ☐ E. **Optional** – Verification of the notifications required in part XII of this application. If not submitted with the application, the MPCA must receive the verification prior to permit issuance. It is strongly recommended that the applicable verifications be included with the permit application.



Minnesota Pollution Control Agency

520 Lafayette Road North
St. Paul, MN 55155-4194

Emergency Response Plan

NPDES and SDS Permit Program

Feedlot Program

Doc Type: Permit Application

Applicability: This *Emergency Response Plan* is to be used in case of an emergency spill, leak, or failure at the production facility or land application area and to assist with response to catastrophic animal mortality events (barn fires, tornadoes, etc.). You must submit this form as part of an application for National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) feedlot permit coverage.

Facility name: Willow Tree

Feedlot registration no.: 103-97796

Owner/Operator name: _____

Feedlot permit no.: _____

List of critical phone numbers and contacts

List of critical phone numbers and contacts	Contact person (or Company)	Phone number	
Emergency contacts			
• Fire/Ambulance	-----	911	
• County Sheriff	Nicollet	507-931-1570	
Agency contacts			
• Minnesota Duty Officer	-----	1-800-422-0798	Provide the Minnesota Duty Officer: • Your contact information • Incident location, date, and time • For spills – spill type – spill amount – surface water or field tile impacted • Progress made in response to the spill or catastrophic mortality event
• Minnesota Pollution Control Agency (MPCA) Field Office	Mankato	507-344-5260	
• County Feedlot Officer (CFO)	Nicollet	507-934-7073	
• Board of Animal Health Contact	Dr Greg Suskovic	651-238-2503	
Other contacts			
• Insurance company			
• Gopher State One Call	-----	1-800-252-1166	
•			
Local vendors for spill and/or catastrophic mortality response assistance			
• Manure pumper	MPI	507-674-3920	
• Manure loading equipment	MPI	507-674-3920	
• Earth moving equipment	Todd Marotz	507-276-5564	
• Tiling equipment	Todd Marotz	507-276-5564	
• Containment/Absorption materials (hay, straw, cornstalks, sawdust)	Todd Marotz	507-276-5564	
•			

Manure Spill Emergency Response Procedures*

- Immediately stop the source of a liquid manure leak or spill:
 - Turn off pumps or valves
 - Clamp hoses or park tractor on hoses
- Contain spilled manure:
 - Use skid loader or tractor with blade to make berms
 - Install bale checks and block downstream culverts
 - Insert sleeves around tile intakes (or plug/cap)
 - Use tillage equipment to work ground ahead of spill
 - Use absorptive materials
- Make necessary phone calls as listed in the chart above:
 - Notify Minnesota Duty Officer at 1-800-422-0798
 - Notify sheriff's office if spilled on public roads or right-of-ways
- Cleanup:
 - Clean up spill immediately from road and roadside
 - Clean up all material, including the contaminated soil, as soon as possible by scraping, or by other means
 - Land apply manure at agronomic rates or place manure back in the manure storage area/ solid manure stockpile
 - Follow recommendations of MPCA staff and/or CFO
 - Restore site to its original conditions
 - If rain is expected prior to completion of cleanup; actions need to be taken to contain manure contaminated runoff from solid manure spills
- Document your actions:
 - Keep records of all actions related to the spill and follow up activities

*A detailed site map should be displayed on site to assist employees identify sensitive receptors near the facility (surface water, wells, tile intakes, etc.).

Catastrophic Animal Mortality Response

- Make necessary phone calls as listed in the chart above:
 - Notify Minnesota Duty Officer at 1-800-422-0798
 - Notify Minnesota Board of Animal Health
 - Notify MPCA and CFO
- Cleanup
 - Dispose of mortalities according to recommendations of MN Board of Animal Health Representative
 - Locate disposal area for mortalities to prevent impacts to surface and/or groundwater (consult MPCA/CFO)
- Document your actions
 - Keep records of all actions related to the animal mortality disposal activities

If burial of animal mortalities is necessary, the burial site must meet the following:

- Located 1000 feet from lakes and 300 feet from rivers and streams
- Mortalities are not buried within 5 feet of the seasonal water table
- Mortalities are not buried within 10 feet of karst susceptible bedrock
- Soils are not sandy or gravelly

Describe approximate location(s) of potential burial site(s) below:

contact BOAH

Manure Management Plan (MMP)
requirements when ownership
of manure is transferred

Feedlot Program

Doc Type: Permit Information Form

Are you transferring ownership of manure?

MMP and record-keeping requirements for feedlot owners are different when manure ownership is transferred. Manure ownership is not considered to be transferred (i.e., feedlot owner/operator retains ownership) when you answer "yes" to either question:

1. ☐ Yes ☒ No Is manure from the feedlot facility applied onto land that is owned, leased, or rented by the feedlot owner/operator?
2. ☐ Yes ☒ No For manure application sites not owned, leased, or rented by the feedlot owner/operator, have you as the feedlot owner/operator or employees working under your direction been given control of the crop and nutrient planning decisions, including planning for manure application rates, timing, and methods?

If you answered "No" to both questions, then you are transferring ownership of your manure and the feedlot operator may use these guidelines to complete a MMP.

If you answered "Yes" to either question, you are retaining ownership of manure and must complete a more comprehensive MMP. More information on the requirements when manure ownership is retained and resources to develop a retained ownership MMP can be found on the Minnesota Pollution Control Agency's (MPCA) website at <https://www.pca.state.mn.us/water/feedlots>.

If only a portion of your manure is considered to have transferred ownership, then use this form to develop a MMP for the manure which has transferred ownership, and develop the more comprehensive MMP for the manure which is not transferred.

MMP development

The MMP can be developed using this form or by using other formats that include all required information in Minn. R. ch. 7020.

Name of feedlot facility or operator: Willow Tree Registration number: 103-97796

1. Describe the manure storage and handling system and the expected amount of manure and nutrients that will need to be land applied.

- a) How is the manure stored and handled? What happens to the manure from the time it is generated to the time it is either sold or land applied? Where is it kept? For how long?

Manure is stored in a below barn LMSA until the time of application

- b) How many months can manure be stored before the storage capacity is exceeded?

There is 12 months of storage at the site

- c) When will manure be provided to the recipient? Which months do you expect that manure will be applied?

Manure is provided to the recipient after their crop is harvested usually in September, October and November

- d) How much manure is removed from barns or storage areas per year? How much manure will eventually need to be land-applied?

Amount removed from barns or storage: 3.6M ☐ Tons ☒ Gallons

Amount land applied: 3.6M ☐ Tons ☒ Gallons

- e) How much of this manure will be transferred ownership: 100%

- f) How many pounds of nitrogen (N) and phosphorus (P₂O₅) will need to be land applied per year? (Multiply the expected nutrient content from Part 3.c) by the amount of manure land applied from Part 1.d) to get your answer.) (e.g., 77 pounds N + 1,000 gallons x 1,300,000 gallons = 100,100 pounds of N or alternatively 45 pounds per ton x 3,000 tons = 135,000 pounds of N) (figure P₂O₅ using the same calculations)

N: 72,000 lbs N

P₂O₅: 32,400 lbs P

- g) For new or expanding feedlot facilities, is there enough land potentially available for spreading manure in accordance with allowable rates? ☒ Yes ☐ No

How will you ensure that enough land owners in the area are willing to purchase your manure or otherwise receive your manure? (e.g., enough land to allow spreading in accordance with state nutrient rate limits)

Land application agreements with local farms

2. Describe the manure application methods and equipment.

- a) How will the manure be applied? What method(s) and type(s) of equipment do you expect will be used for manure application by the recipient of your manure, if known?

Manure is applied by drag hose and injected or incorporated immediately

3. Describe your nutrient testing methods, the frequency of testing, and the expected nutrient content of the manure to be applied.

- a) How often will manure be sampled and sent to a laboratory for nutrient analysis? (Minimum state requirements are: annual sampling at National Pollutant Discharge Elimination System [NPDES]-permitted facilities; annual sampling for the first three years and once every four years for other feedlots.)

Samples are collected yearly and sent to the lab

- b) How will the manure samples be collected to ensure that representative samples are obtained for nutrient analysis? (e.g., How many subsamples? When collected? Where collected? University of Minnesota Extension Service publications may be referenced.)

Multiple samples are taken at the time of land application

- c) What is the expected nutrient content of manure to be collected? (e.g., What is the nitrogen and phosphorus content expected from each major type of manure storage area?)

N: 20

☐ Pounds per Ton ☒ Pounds per 1,000 Gallons

P₂O₅: 9

☐ Pounds per Ton ☒ Pounds per 1,000 Gallons

4. Describe how Minnesota's manure application requirements will be provided to manure recipients.

- a) Attach a copy of the state manure application requirements that you will provide to all recipients of your transferred manure. Will you be using Attachment A or another list of state requirements?

Attachment A or record keeping with required information will be used

- b) How will you, as a feedlot owner/operator, maintain records associated with the manure transfer and land application sites/rates? Will you use MPCA recordkeeping forms for transferred ownership (Attachment B) or will you use a different form? Note: Attachments A and B can be obtained from MPCA offices or on the MPCA's website at <https://www.pca.state.mn.us/water/feedlots>.

Attachment A & B or record keeping with required information will be used.

- c) How will you provide the manure recipient with manure nutrient test results and expected manure nutrient content? You may use Attachment B or other forms which include test results.

Manure test results will be included with application records

Animal mortality management (NPDES and SDS permitted sites only)

Indicate with a check mark the anticipated method(s) of dead animal disposal.

☒ Rendering

Carcasses at the pick-up point will comply with the following:

- Kept in an animal-proof, enclosed area.
- At least 200 yards from a neighbor's buildings.
- Picked up within 72 hours (7 days if refrigerated to less than 45 degrees).
- Other: _____

☒ Composting

The composting area will comply with the following:

- Built on an impervious, weight-bearing pad that is large enough to allow equipment to maneuver.
Note: Class V gravel material is not considered to be impervious.
- Covered with a roof to prevent excessive moisture on the composting material, but if sawdust or other water-repelling material is used as the bulking agent, a roof may not be necessary.
- Built of rot-resistant material that is strong enough to withstand the force exerted by equipment.
- Large enough to handle each day's normal mortality through the endpoint of the composting which consists of a minimum of two (2) heat cycles.
- Other: _____

☐ Burial

The following operational practices will be implemented:

- Stay 5 feet above seasonal high water table.
- Stay 1000 feet away from lakes and 300 feet away from rivers, streams, ditches, etc.
- Be covered immediately with enough soil to keep scavengers out (three feet is sufficient).
- Not be placed in sandy or gravelly soil types.
- Maintain at least 10 feet vertical separation between dead animals and bedrock.
- Other: _____

☐ Incineration

The incinerator will meet the following:

- Capable of producing emissions not to exceed 20 percent opacity.
- Fitted with an afterburner that maintains flue gases at 1,200 degrees Fahrenheit for at least 0.3 seconds.
- Ash from the incinerator must be handled in such a manner as to prevent particulate matter from becoming airborne.

☐ Other Method

The following operational practices will be implemented (describe the alternative method below):

Attachment A – Minimum state requirements for applying manure

Provide this information to the manure recipient

Manure analysis

N _____ P _____ K _____

I. Nitrogen rate limits

Limit rates so that estimated plant-available N from all manure and fertilizer sources combined does not exceed the nitrogen recommendations of the University of Minnesota. For corn crops, rates should be consistent with the MRTN.

- 195 lbs/N for corn following corn (as of 2020)
- 150 lbs/N for corn following soybeans (as of 2020)

All sources of nitrogen must be considered when calculating nitrogen application rates. This includes residual nitrogen from alfalfa grown two years ago, commercial fertilizer (starter or supplemental), nitrates in groundwater, and manure applied last year.

Crop-available manure N applied to legumes cannot exceed legume nitrogen removal rates; 3.5 lbs N per bushel of soybeans, 50 lbs N per ton of alfalfa, 27 lbs N per ton grass hay.

Summer applications – Plant a cover crop where manure is applied in June, July, or August to harvested fields that would otherwise remain without crop cover for the rest of the growing season.

Calculating N available this year from manure applied to the previous crop

$$\frac{\text{Application rate last year (tons or gal/acre)}}{\div 1000} \times \frac{\text{Liquid only}}{\div} \times \frac{\text{Availability factor 0.15 for swine 0.25 for all others}}{\div} \times \frac{\text{N Test last year}}{\div} = \frac{\text{N available this year (lbs/acre)}}{\div}$$

Calculating a manure application rate for the upcoming crop

$$\frac{\text{Desired amount of N from manure}}{\div} \div \frac{\text{Availability factor (\# from table 1/100)}}{\div} \times \frac{\text{Manure N Test}}{\div} \times \frac{\text{Liquid only}}{\div} \times 1000 = \frac{\text{Application Rate (tons or gal/acre)}}{\div}$$

Calculating N available from manure applied for the upcoming crop

$$\frac{\text{Application rate (tons or gal/acre)}}{\div 1000} \times \frac{\text{Liquid only}}{\div} \times \frac{\text{Availability factor (\# from table 1/100)}}{\div} \times \frac{\text{N Test this year}}{\div} = \frac{\text{N available this year (lbs/acre)}}{\div}$$

II. Manure application setbacks

Manure application must comply with the following setbacks. County setbacks may be more restrictive.

Feature	Surface application	Incorporation within 24 hrs
Lakes, streams	300'*	25'
Wetlands (10+ ac)	300'*	25'
Drainage ditches w/o berms	300'*	25'
Open Tile Intakes	300'	0'
Sinkholes w/o berms		
Downslope	50'	50'
Upslope	300'	50'
Wells and quarries	50'	50'

* 100' vegetated buffer can be used instead of 300' setback for non-winter applications (50' buffer for wetlands/ditches)

Table 1. Percent of total manure nitrogen available the first year

Animal Type	Broadcast			Injection	
	Incorporation after 4 days	Incorporation 12 - 96 hrs	Incorporation within 12 hrs	Knife	Sweep
Beef	25	45	60	50	60
Dairy	20	40	55	50	55
Swine	35	55	75	70	80
Poultry	45	55	70	70	70

If you have a manure spill contact the state duty officer at 1-800-422-0798

III. Soil phosphorus (P) management

Soil P testing – Test soils for P at least once every four years.

Avoid P build-up within 300 feet of waters* – Where soils test P levels exceed 21 Bray P-1 or 16 Olsen, the rate and frequency of manure applications must not allow soil phosphorus build-up over a six year period, unless a 50-100' vegetative buffer is established along the waters. Single year applications can be based on nitrogen if the remaining phosphorus is removed by subsequent crops.

Avoid extremely high P soils – Avoid manure application onto fields where soils exceed:

- 150 ppm Bray P-1 or 120 ppm Olsen
- 75 ppm Bray P-1 or 60 ppm Olsen within 300 feet of water or tile intakes.

* "waters" refers to lakes, streams, intermittent streams, wetlands over 10 acres, and drainage ditches without protective berms.

IV. Manure recipient record keeping requirements

The cropland manager must keep records of the following for at least three years (six years if applying near waters):

- Manure test dates and results
- Field ID and acreage
- Soil P test dates and results
- Crop grown and yield goal
- Previous crop grown
- N recommendation for the crop grown
- N from irrigation water
- Carry-over N from previous manure applications
- Date and rate of manure application
- Method of application and incorporation timing
- Manure N and P₂O₅ available
- Fertilizer N and P₂O₅ applied
- Total lbs N available/acre (all sources)
- Total lbs P₂O₅ available/acre (all sources)

V. Short-term stockpiling practices

Follow all stockpiling setbacks for waters and conduits to waters (ranging from 50 to 300 feet); avoid sandy soils and high water table soils (<2'); avoid slopes over 6%; use diversions if slopes exceed 2%; and keep records as required in Minn. R. 7020.2125. The stockpile size must not exceed the amount of manure needed to supply nutrient needs to the tract of land where applied.

More information: For more information, contact the MPCA or visit the website at <https://www.pca.state.mn.us/water/feedlots>.

Attachment B



520 Lafayette Road North
St. Paul, MN 55155-4194

Records when manure ownership is transferred 300 or more animal units

Feedlot Program

Records for feedlot owners (manure generator) and commercial applicators

Doc Type: Permit Information Form

Instructions: This record keeping form is for feedlot owners that transfer the ownership of manure generated by 300 animal units or more. The form must be completed by the feedlot owner, where the manure is generated, and the manure applicator. It can also be used by commercial applicators to complete their record keeping requirements.

You will need to make three copies of this form for each transfer. Triplicate copies are available.

Copy 1: Kept by feedlot owner where manure is generated after completion of step #1.

Copy 2: Kept by applicator after completion of step #3.

Copy 3: Returned to feedlot owner where manure was generated after completion of step #3.

Step 1: Manure generation (Completed by feedlot owner where manure is generated)

Facility name where manure generated: _____

Facility address: _____

City: _____ State: _____ Zip: _____

Manure analysis results (Must be representative of manure transferred)

Manure source: _____ Date analyzed (mm/dd/yyyy): _____

N: _____ P₂O₅: _____ K₂O: _____ Units: ☐ lb/ton ☐ lb/1000 gallons

Name of company or individual taking manure from feedlot: _____

Address: _____

City: _____ State: _____ Zip: _____

Total quantity transferred: _____ ☐ tons ☐ gallons Date(s) transferred: _____

Step 2: Short-term stockpiling (Completed by owner of the stockpile - Provide form to person applying manure.)

If no stockpile, go to step 3.

Stockpile location(s)				Quantity stockpiled (tons)	Date stockpile established (mm/dd/yyyy)	Date land applied (mm/dd/yyyy)
County	Township	Section	Quarter			

Step 3: Manure application (Completed by person applying manure.)

Name of company or individual that applied manure: _____

Address: _____

City: _____ State: _____ Zip: _____

Minnesota Department of Agriculture commercial applicator license number (if used): _____

Field ID	County	Township	Section	Application rate (tons or gallons/ac)	Application method (see choices below)

Application methods: Incorp. within 12 hours., Incorp. 12 – 96 hours, Incorp. after 96 hours, Sweep injection, Knife injection

Site Map - Not to Scale



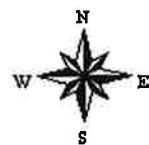
Maps Provided By:

© AgriData, Inc. 2021 www.AgriDataInc.com

Map Center: 44° 26' 49.27, -94° 13' 43.61

5-111N-28W
Nicollet County
Minnesota

0ft 225ft 449ft



2/16/2021

Field borders provided by Farm Service Agency as of 5/21/2008

Odors From Feedlots Setback Estimation Tool

Farm Name
 Address or County
 Evaluator
 Date

Clear All

OFFSET Ver 2.0
 University of Minnesota
 10/1/2018

OFFSET
 Annoyance-free
 95%

Source Edge to Nearest Neighbor (ft)
 Source Edge to Property Line (ft)

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Swine Farrowing - pull plug ▼	132	330	1	43560	None ▼	
Swine Gestation or Farrow -t ▼	143	520	1	74360	None ▼	
None ▼				0	None ▼	
None ▼				0	None ▼	
None ▼				0	None ▼	
None ▼				0	None ▼	
None ▼				0	Biofilter ▼	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Dry crusted stockpile ▼	Rectangle ▼	50	80	4000	None ▼
None ▼	Rectangle ▼			0	None ▼
None ▼	Rectangle ▼			0	None ▼
None ▼	Rectangle ▼			0	None ▼
None ▼	Rectangle ▼			0	None ▼
None ▼	Rectangle ▼			0	None ▼
None ▼	Rectangle ▼			0	None ▼

Building Sources	
Add Source Type	
Name of Source	
Odor Flux (ow/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources	
Add a Source Type	
Name of Source	
Odor Flux (ow/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

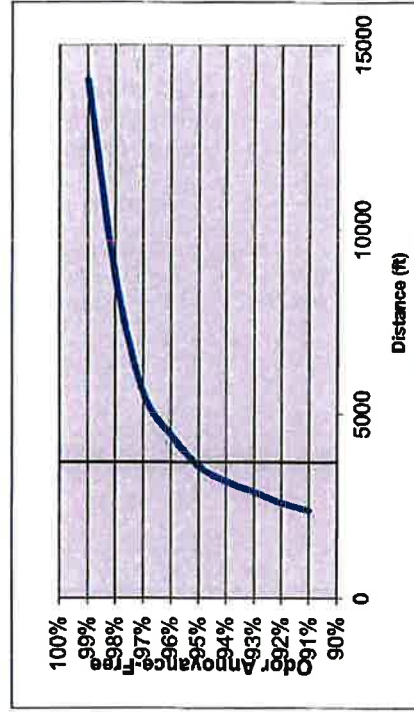
OFFSET Ver 2.0
University of Minnesota
10/1/2010

Farm Name	Willow Tree
County	Nicollet
Evaluator	Jeff Bauman
Date	2/16/2021

[illegible]

Site Emissions			
Total Site Area (ft2)	121,920		
Total Odor Emission Factor (TOEF)	433		
Total Site H2S Emissions (mg/s)	46		
Total Site H2S Emission AVERAGE (lbs/day)	9		
Total Site H2S Emission MAX (lbs/day)	17		
Total Site H2S Emissions (tons/yr)	2		
Total Site Ammonia Emissions (mg/s)	#VALUE!		
Total Site Ammonia Emission AVERAGE (lbs/day)	#VALUE!		
Total Site Ammonia Emissions MAX (lbs/day)	#VALUE!		
Total Site Ammonia Emissions (tons/yr)	#VALUE!		

Source Edge to Nearest Neighbor (ft)	3710
OFFSET Annoyance-free frequency	95%





Notice of Application To Permit A Livestock Feedlot

Notice is hereby given per Minnesota Statute 116.07 subd, 7 (a) that

LJ Farms LLC
34701 481st Ave
Gaylord, MN 56334

has applied to Nicollet County to modify a feedlot permit with more than 500 animal units.

The facility is in the NW ¼ of the SW ¼, Section 5, New Sweden Township, Nicollet County.

The facility is currently registered for 30 head of dairy heifers (21 AU) and 44 head of feeder cattle (30.8 AU). Components listed on the registration include a 60' x 90' partial confinement barn and a 55' x 70' partial confinement barn. Both components share a 14,600 sq foot open lot without runoff controls.

The applicant is proposing to modify the feedlot by constructing a 132' x 330' x 2' total confinement barn with below barn concrete tank LMSA and a 142'8" x 520' x 10' total confinement barn with below barn concrete tank LMSA. The applicant is also proposing to add 2328 head (931.2 AU) of swine more than 300 lbs and 160 head (48 AU) of swine 55 – 300 lbs to the facility. A 50' x 80' compost facility will also be added.

The 30 head of dairy heifers and 44 head of feeder cattle will be removed from the registration along with the 60' x 90' and the 53' x 70' partial confinement barns. The open lots without runoff controls will also be eliminated.

After construction, the total animal units will be 979.2.

This publication shall constitute as notice to each resident and each owner of real property within 5000 feet of the perimeter of the proposed feedlot as required by Minnesota State Law.



Geotechnical Evaluation Report:

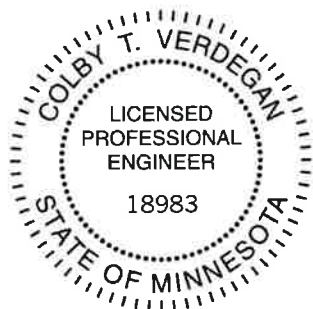
Proposed Wakefield Pork Willow Tree Sow Site
SW ¼ Section 5, T11N, Range 28W
New Sweden Twp., Nicollet County, Minnesota

Prepared for:

Todd Marotz
Wakefield Pork Inc.

January 27, 2021
CVT Project: 17809.21.MNS

ATTACHMENT F.4
Geotechnical Report



I hereby certify that this report was prepared by me or under my direct supervision, and that I am a duly licensed engineer under the laws of the State of Minnesota.

A handwritten signature in black ink, appearing to read 'Colby T. Verdegan'.

Colby T. Verdegan, PE
Geotechnical Engineer
Registration Number 18983
Date: January 27, 2021

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SOIL BORING LOCATION SKETCH
LOG OF BORING # 1-5
LEGEND TO SOIL DESCRIPTION

Chosen Valley Testing, Inc.

Geotechnical Engineering and Testing, 1410 7th Street NW, Rochester, Minnesota 55901, (507) 281-0968, fax (507) 289-2523

Mr. Todd Marotz
Wakefield Pork Inc.
410 Main Ave. East
Gaylord, MN 55334
Todd_Marotz@wakefieldpork.com

January 27, 2021

cc: Mr. Matt Hudson
I&S Group
matt.hudson@is-grp.com

**Re: Geotechnical Evaluations
 Proposed Wakefield Pork, Willow Tree Sow Site
 SW ¼ Section 5, T111N, Range 28W
 New Sweden Twp.
 Nicollet County, Minnesota
 CVT Project Number: 17809.21.MNS**

Dear Mr. Marotz,

As authorized, we have completed the geotechnical evaluation of the proposed Wakefield Pork Willow Tree Sow Site near Sweden TWP, Minnesota. This brief report summarizes the results of the borings.

A. Introduction

The intent of this report is to present our findings and describe the means used to collect the data. The data was collected for a specific purpose and may not be suitable for other purposes. We should be consulted before attempting to use the data for other uses. A complete and thorough review of the entire document, including its assumptions and its appendices, should be undertaken immediately upon receipt.

A.1. Scope

To provide data for analysis, a total of five (5) penetration test borings were performed. The borings were drilled to the planned depths of about 11 to 14.9 feet. Our engineering scope consisted of providing geotechnical recommendations for the proposed structures.

A.2. Boring Locations

The boring locations were selected and staked in the field by I&S Group. The Soil Boring Location Sketch in the Appendix shows the approximate locations as drilled and was based on superposing the project layout onto a satellite view of the site using Google Earth software.

Elevations at the boring stakes were provided to Chosen Valley Testing provided by I&S.

A.3. Geologic Background

A geotechnical report is based on subsurface data collected for the specific structure or problem. Available geologic data from the region can help interpretation of the data and is briefly summarized in this section.

Geologic maps and well data suggest that the natural upper soil in the area consist primarily of washed till. Bedrock is understood to be more than 350 feet below the surface and not a consideration.

B. Subsurface Data

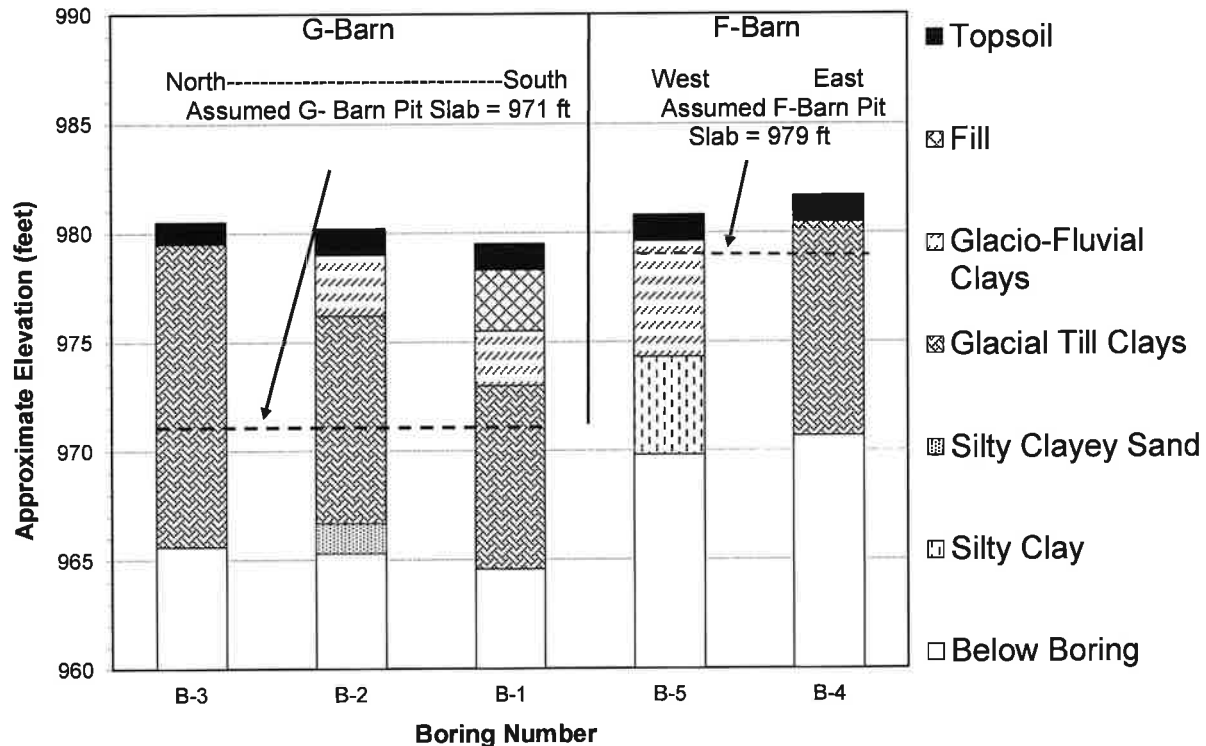
The borings were performed using penetration test procedures (Method of Test D1586 of the American Society for Testing and Materials). This procedure allows for the extraction of intact soil specimen from deep in the ground. With this method, a hollow-stem auger is drilled to the desired sampling depth. A 2-inch OD sampling tube is then screwed onto the end of a sampling rod, inserted through the hole in the auger's tip, and then driven into the soil with a 140-pound hammer dropped repeatedly from a height of 30 inches above the sampling rod. The sampler is driven 18 inches into the soil, unless the material is too hard. The samples are generally taken at 2½ to 5-foot intervals. The core of soil obtained was classified and logged by our drilling personnel at the site and a representative portion was then sealed and delivered to our laboratory for further review.

B.1. Strata

At the surface, the borings encountered about 1 foot of topsoil materials. Below the topsoil, the southern boring for the gestation building met dark materials which appeared to be fill to about 4 feet. The existence of fill at this location seems improbable, though this boring was at the lowest elevation among the borings. The materials observed this might represent disturbance from tile installation or possibly gradual filling in of a low area as a result of erosion after tilling the field.

The soils below the topsoil or possible fill were dominated by glacial clays. The uppermost materials consisted of soft fluvial sandy lean clays at three locations. This layer was underlain by silty clay in the west boring for the farrowing barn, and that boring terminated in the silty clay. The dominant materials at depth in the other four borings were glacial till sandy lean clays and three borings terminated in those deposits. The central boring for the gestation building terminated in a layer of silty clayey sand.

The soil boring data have been summarized in the following cross-section. For the reader's convenience, the approximate elevations of the planned pit slabs are also indicated on the cross-section. Please refer to the Log of Boring sheets in the Appendix for more detailed information.



B.2. Penetration Test Results

Penetration Test Results: The number of blows needed for the hammer to advance the penetration test sampler is an indicator of soil characteristics. The results tend to be more meaningful for natural mineral soils, than for fill soils. In fill soils, density tests are more meaningful.

A penetration resistance value ("N" Values) of 4 blows per foot (BPF) was recorded in the fill materials. N Values recorded in the natural fluvial clays ranged from 4 to 6 BPF, indicating they were rather soft to medium. The glacial till soil's N Values ranged from 5 to 16 BPF, indicating the sands were very loose to medium dense and the clays were rather soft to very stiff.

A key to the descriptors used to qualify the relative density of soil (such as *soft*, *stiff*, *loose*, and *dense*,) can be found on the Legend to Soil Description in the Appendix.

B.3. Groundwater Data

During drilling, the drillers may note the presence of moisture on the sampler, in the cuttings, or in the borehole itself. These findings are reported on the Logs of Boring. Because water levels vary with weather, time of year, and other factors, the presence or lack of water during exploration is subject to interpretation and is not always conclusive.

Free water was not observed in any of the borings. The uppermost soils in most borings were very wet often mottle, and this appears to be the result of surface water perching or ponding on the glacial till soils. In the deeper borings, the soils tended to be brown, but transitioned to gray at about 12 feet, suggesting the static water is more commonly about 12 feet below the surface.

Because the soils have very low permeabilities, long-term water level monitoring would likely be required to more accurately measure the water levels at the site. We would expect groundwater levels to fluctuate similarly to nearby creeks and rivers, along with local weather patterns.

The United States Department of Agriculture Soil Survey suggest groundwater levels are 0 to 8 inches below the surface.

C. Design Data

Because each structure has a different loading configuration and intensity, different grades, and different structural or performance tolerances, the results of a geotechnical exploration will mean different things for different facilities. If the design of the facility changes, we should be contacted to discuss the possible implications of the changes. Without a chance to review such changes, the recommendations of the soils engineer may no longer be valid or appropriate.

The proposed project consists of the construction of a farrowing barn and gestation barn. Plans for the structure were preliminary. I&S indicated a preliminary pit slab for the gestation barn to be at about elevation 971 and a pit elevation for the farrowing barn of about 979 feet.

D. Analysis

D.1. Bedrock Considerations

According to the Minnesota Rules Chapter 7020, manure in a concrete-lined pit must be kept at least 5 feet above soluble bedrock, with this rule further dependent on pit size, the use of additional liners, and other karst factors. Bedrock was not encountered during our exploration and is expected to be more than 350 feet below the surface.

The County Feedlot officer or Minnesota Pollution Control Agency (MPCA) should be contacted to determine the type of preparations needed for this facility in consideration of the several factors involved. We do not anticipate the need for a secondary liner since the estimated manure pit bottom elevation is over 350 feet above bedrock.

D.2. Groundwater/De-Watering

Basin bottoms must be maintained above the water table or a drain tile should be installed to maintain water levels below the basin. The soil coloration suggests possible water perching near the surface with a static water level more like 12 feet below the surface or about elevation 968 feet. A perimeter drain tile

is recommended as a precaution against surface water problems and to prevent excess moisture from collecting behind the walls.

D.3. Grading

The topsoil is not suitable for foundation support and should be removed from below the barns, along with any existing fill. The stripped or excavated surface should be extended at least 1 foot past the perimeter barn footings for each foot of fill needed below footing grade. At the locations explored, it appears that these materials will be removed in order to attain pit slab elevations.

The soils at most locations were medium to rather soft and will likely be easily disturbed by construction equipment. Construction equipment should not be allowed to drive on the soils or instability may result. Excavations should be performed using a backhoe moving backward which "back casts" the excavated soil while progressing backwards, in order to limit disturbance to the soils. The backhoe should have a smooth lip to result in a smooth even surface for placing concrete and reinforcement.

All fill placed below the structures should be compacted to at least 95% of its standard Proctor density. For ease in construction, clean sands are preferred materials for filling below structures.

D.4. Bearing Capacity and Settlement

Based on the boring data and the assumed pit bottom elevation, the foundation of the proposed manure structures are expected to bear on glacial till or fluvial clays, and compacted sand fill over natural clays. We recommend sizing foundation pressures to 2,000 psf. This value assumes a factor of safety of 3 against shear failure. Based on the data and the assumed loads, total settlement of the farrowing barn is expected to be about 1 inch. Settlement of the gestation barn is expected to be minimal.

D.5. Backfilling and Lateral Earth Pressure

The soils on-site are considered generally suitable for backfilling around the structures provided they are adequately compacted. To limit perimeter settlement as well as infiltration of water into the backfill, we recommend compacting all fill to 95% of its maximum standard Proctor density. The ground surface around the structure should be sloped away from the buildings for drainage reasons and to prevent undue pressures on the foundation walls.

Earth pressures on the walls will depend on the soil used, its compaction, drainage and slopes around the structure, along with the allowable deformation of the walls. We suggest using an equivalent fluid pressure of 80 pcf for preliminary design.

D.6. Construction Phase Testing

The MPCA requires construction testing and inspection on all manure storage structures. Typical requirements would include:

- Evaluation of the natural soils after topsoil stripping and before placing any fill
- Compaction testing on fills used for embankments, subgrades, etc, and
- Inspection and testing of structural components, such as documentation of reinforcement, control joints, water stops, drain tile, etc.

Although our firm provides most of the needed services, the necessity and extent of such services will need to be determined by consultation between the design consultant and the appropriate regulatory services and your design consultant may also provide many of these services as well.

E. Level of Care

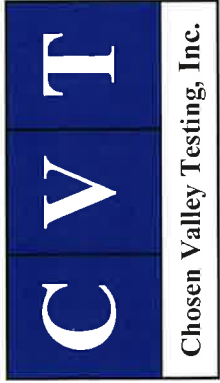
The services provided for this project have been conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in this area, under similar budget and time constraints. This is our professional responsibility. No other warranty, expressed or implied, is made.

Appendix

Soil Boring Location Sketch

Log of Boring # 1-5

Legend to Soil Description

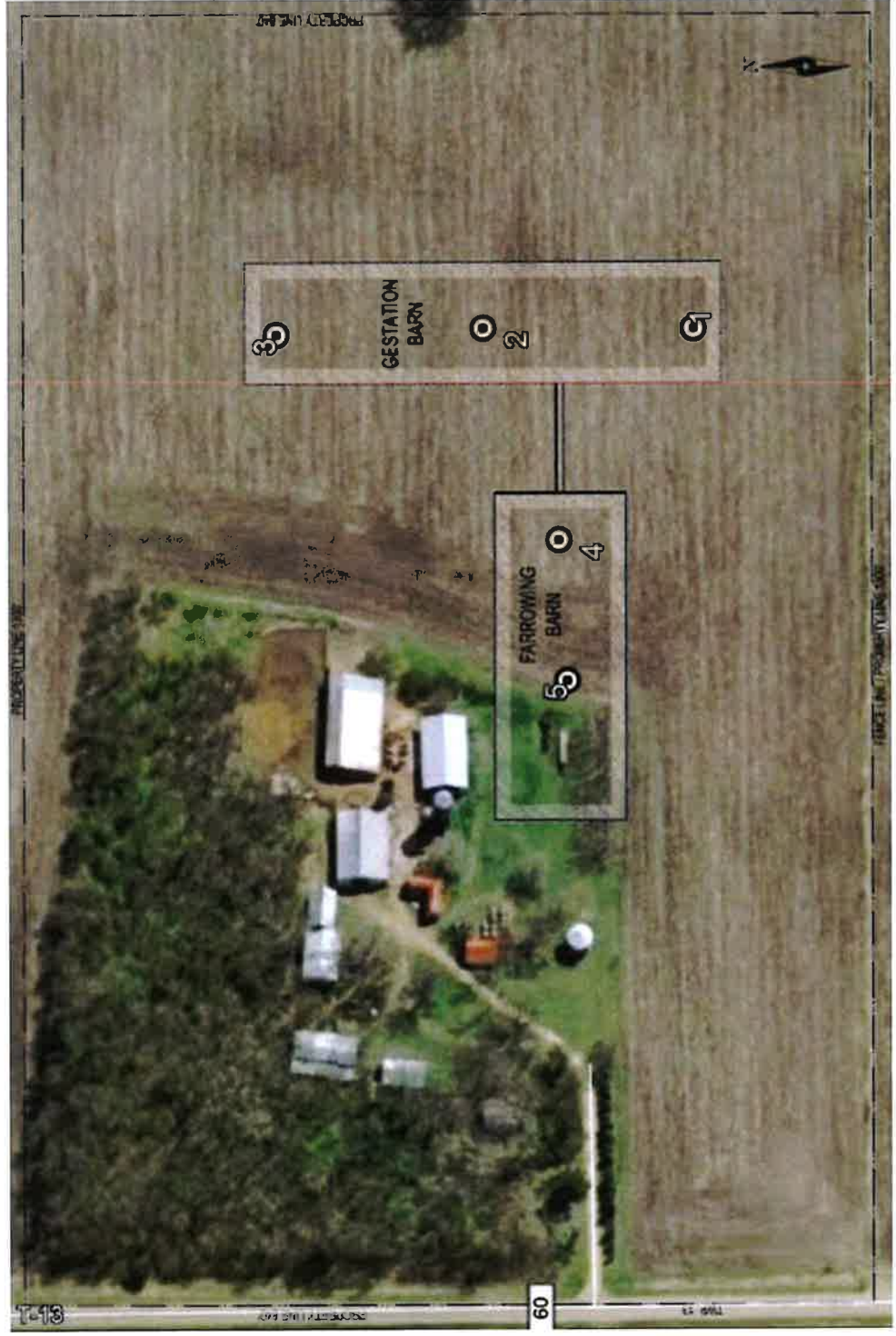


Legend

 Boring Locations

Boring Location Sketch

Wakefield Pork Complex
SW ¼ of Section 5, T111N, R28W
New Sweden Twp, Nicollet County Minnesota
17809.20.MNS



LOG OF BORING

CHOSEN VALLEY TESTING

CVT

PROJECT: 17809.20.MNS Design Phase Geotechnical Evaluation Willow Tree Manure Storage SW 1/4 of Section 5, T111N, R28W New Sweden Twp. and Nicollet Co., Minnesota				BORING: B-01	
				LOCATION: See attached sketch.	
				DATE: 1/12/2021	SCALE: 1" = 3'

Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
979.5	0.0					
978.3	1.2	OL	<u>TOPSOIL</u> , Slightly Organic Silty Clayey Sand, fine-to-medium grained, trace Roots, black, wet.			Elevations were provided by the client on the boring stakes.
		CL	<u>POSSIBLE FILL</u> , Lean Clay, gray and black mixed, wet.	4		PP=1 1/4 tsf MC=34.1%
975.5	4.0	CL	<u>SANDY LEAN CLAY</u> , grayish brown, wet, medium. (Glacio-Fluvium)	6		PP= 1/2 MC=29.2%
973.0	6.5	CL	<u>SANDY LEAN CLAY</u> , brown to 12 feet then gray, wet, medium to rather stiff. (Glacial Till)	6		MC=25.1%
				8		
				9		
				12		
964.6	14.9		End boring. Water was not observed. Boring was sealed upon completion.			

CVT STANDARD 17809.20.MNS (NICOLLET Willow Tree MANURE STORAGE) GPJ LOG A GNN06 GDT 1/20/21

LOG OF BORING

CHOSEN VALLEY TESTING

CVT

PROJECT: 17809.20.MNS Design Phase Geotechnical Evaluation Willow Tree Manure Storage SW 1/4 of Section 5, T11N, R28W New Sweden Twp. and Nicollet Co., Minnesota				BORING: B-02	
				LOCATION: See attached sketch.	
				DATE: 1/12/2021	SCALE: 1" = 3'

Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
980.2	0.0	OL	<u>TOPSOIL</u> , Slightly Organic Silty Clayey Sand, fine-to-medium grained, trace Roots, black, wet.			
979.0	1.2	CL	<u>SANDY LEAN CLAY</u> , trace Gravel, gray, wet, rather soft. (Glacio-Fluvium)	4		PP= 2 1/4 tsf MC=19.4%
976.2	4.0	CL	<u>SANDY LEAN CLAY</u> , trace Gravel, brown to 12 feet then gray, wet, rather soft to medium. (Glacial Till)	5		PP=1 1/4 tsf MC=22.9%
				6		
				7		MC=17.6%
				9		
966.7	13.5	SC SM	<u>SILTY CLAYEY SAND</u> , fine grained, trace Gravel, gray, wet, medium dense. (Glacial Till)	16		
965.3	14.9		End boring. Water was not observed. Boring was sealed upon completion.			

CVT STANDARD 17809.20.MNS (NICOLLET Willow Tree MANURE STORAGE) GPJ LOG A GNN06.GDT 1/20/21

LOG OF BORING

CHOSEN VALLEY TESTING

CVT

PROJECT: 17809.20.MNS Design Phase Geotechnical Evaluation Willow Tree Manure Storage SW 1/4 of Section 5, T111N, R28W New Sweden Twp. and Nicollet Co., Minnesota				BORING: B-03 LOCATION: See attached sketch.	
				DATE: 1/12/2021	SCALE: 1" = 3'

Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
980.5	0.0	OL	<u>TOPSOIL</u> , Slightly Organic Silty Clayey Sand, fine-to-medium grained, trace Roots, black, wet.			
979.5	1.0	CL	<u>SANDY LEAN CLAY</u> , trace Gravel, brown to 12 feet then gray, wet, medium to rather stiff. (Glacial Till)			
				6		PP=1 1/4 tsf MC=23.9%
				8		PP= 1 1/2 tsf MC=26.3%
				6		
				6		MC=20.2%
				9		
				10		
965.6	14.9		End boring. Water was not observed. Boring was sealed upon completion.			

CVT STANDARD 17809.20.MNS (NICOLLET WILLOW TREE MANURE STORAGE) GPJ LOG A GNNNO6.GDT 1/20/21

LOG OF BORING

CHOSEN VALLEY TESTING

CVT

PROJECT: 17809.20.MNS Design Phase Geotechnical Evaluation Willow Tree Manure Storage SW 1/4 of Section 5, T111N, R28W New Sweden Twp. and Nicollet Co., Minnesota				BORING: B-04	
				LOCATION: See attached sketch.	
				DATE: 1/12/2021	SCALE: 1" = 3'

Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
981.7	0.0	OL	<u>TOPSOIL</u> , Slightly Organic Silty Clayey Sand, fine-to-medium grained, trace Roots, black, wet.			
980.5	1.2	SC	<u>CLAYEY SAND</u> , fine-to-medium grained, trace Gravel, brown, wet, loose to medium dense. (Glacial Till)			
				9		MC=20.3%
				7		
				10		MC=17.9%
				13		
970.7	11.0		End boring. Water was not observed. Boring was sealed upon completion.			

CVT STANDARD 17809.20.MNS (NICOLLET Willow Tree MANURE STORAGE) GPJ LOG A GNNND6.GDT 1/20/21

LOG OF BORING

CHOSEN VALLEY TESTING

CVT

PROJECT: 17809.20.MNS Design Phase Geotechnical Evaluation Willow Tree Manure Storage SW 1/4 of Section 5, T111N, R28W New Sweden Twp. and Nicollet Co., Minnesota				BORING: B-05		
				LOCATION: See attached sketch.		
				DATE: 1/12/2021		SCALE: 1" = 3'
Elev. 980.8	Depth 0.0	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
		OL	TOPSOIL , Slightly Organic Silty Clayey Sand, fine-to-medium grained, trace Roots, black, wet.			
979.6	1.2	CL	SANDY LEAN CLAY , trace Gravel, gray to 5 feet then brown and gray mottled, wet, rather soft. (Glacio-Fluvium)	4		PP= 3/4 tsf MC=24.4%
				5		PP= 1 tsf MC=30.6%
974.3	6.5	CL	SILTY CLAY , brown, wet, rather soft to medium. (Glacio-Fluvium)	6		
				5		
969.8	11.0		End boring. Water was not observed. Boring was sealed upon completion.			

CVT STANDARD 17809.20.MNS (NICOLLET Willow Tree MANURE STORAGE).GPJ LOG A GNNN06.GDT 1/20/21

Willow Tree Sow Site

SW 1/4 Section 5, T111N, R28W

New Sweden Township, Nicollet County

Date: February, 2021

Project No.: 20-24835



Architecture
Engineering
Environmental
Planning
isginc.com

OWNER:
Wakefield Pork, Inc
410 Main Avenue, East
Gaylord, MN 55334

FROM:
ISG – Mankato
115 East Hickory Street, Suite 300
Mankato, MN 56001
Contact: Matt Hudson
Phone: 507-317-2526
Email: matt.hudson@isginc.com

CONCRETE LINED STORAGE STRUCTURE

A Concrete lined manure structure is a fabricated structure for the temporary storage of animal or other organic wastes to conserve nutrients, prevent pollution and protect the environment. The following guidelines are provided for your use in operating and maintaining your structure:

- A.** Animal manure shall be handled and utilized as specified in the Manure Management plan.
- B.** Poisonous, noxious or explosive gases produced in the tank must be controlled by ventilation. Evacuate the building if practical during agitation.
- C.** Regular inspection should be made of the structure and its surroundings for leaks, deterioration of grills, slats, covers, and ladders. Deteriorating items should be replaced to avoid future accidents.
- D.** Concrete should be checked for large cracks, which could expose the reinforcing steel to corrosive elements. Joints should be inspected for unusual openings.
- E.** Concrete surfaces should be checked for erosion, scaling and exposed reinforcing steel.
- F.** If any concrete deterioration is evident, call your local MPCA office. Depending on the damage, an engineer may be needed to evaluate the pit and propose a solution.
- G.** Regular inspections should be made of the perimeter tile, shut off valves, and inspection risers to ensure proper operations of the system.

PRE-CONSTRUCTION MEETING

A pre-construction meeting is a meeting that involves the owner, the contractor, the design engineer, the inspector and the MPCA or the County feedlot officer. The object of the meeting is to ensure that the structure is built to comply with the rules of the MPCA and the designed plans. Any questions or comments can be discussed at this meeting. Any changes to the plans or specifications must be submitted to the Engineer and the MPCA / County prior to the start of construction.

The project schedule, proper notifications, contact information for contractors, owners, MPCA and County Feedlot Officer, and any sub-contractor information will be discussed at this meeting.

The Pre-construction meeting shall be scheduled at least one week before construction is to begin on the structure. This will be determined mainly by when the contractor can begin work and the owner and engineer's agreement to the timing of the meeting. A time of day and location for the meeting shall be agreed upon by the contractor, owner, design engineer and inspector. The owner shall be responsible for contacting all of the above and scheduling the meeting.

INSPECTION PLAN

An owner constructing a liquid manure storage area, except for concrete lined manure storage areas with a capacity of 20,000 gallons or less, shall have plans designed by a licensed engineer and inspections completed during the construction process which comply with the following:

- A.** The inspector must be one or more of the following:
 - 1. A professional engineer licensed in the State of Minnesota or a person working under the Professional Engineer's direct supervision;
 - 2. A qualified Natural Resources Conservation Services Staff Person; or
 - 3. If the manure storage area has a concrete liner, an American Concrete Institute or Minnesota Department of Transportation concrete field testing technician grade/level I certified and concrete field inspector level II certified.
- B.** The General Contractor / Owner is required to call the inspector a minimum of 48 hours prior to beginning excavation and 24 hours prior to placing concrete. Contact will be kept with the inspector throughout the project until the concrete lined storage area is complete.
- C.** The General Contractor / Owner is required to call the MPCA / County Feedlot Officer 3 days before any construction activity begins.
- D.** The General Contractor / Owner is required to call the MPCA / County Feedlot Officer 3 days before the perimeter pit walls are backfilled. A final inspection by the MPCA / County Feedlot Officer is required prior to backfill.
- E.** During construction of each manure storage area the inspector shall record observations related to conformance to the design plans and specifications and construction standards of the following:
 - 1. Subgrade conditions prior to liner placement including soil texture, strength and moisture content, and presence of any frozen soils;
 - 2. Location and proper functioning of the perimeter drainage tile system, if required, and inspection/monitoring access;

3. For all concrete-lined manure storage areas:
 - a. Reinforcing steel size, grade, spacing, cover, and that steel is free of loose rust, oil, or other debris;
 - b. Handling, placement, consolidation, and finishing of concrete;
 - c. Curing and protection of concrete after placement, including hot and cold weather protective measures;
 - d. Location, forming, and surface preparation of construction, contraction, and expansion joints;
 - e. Placement of flexible waterstop materials in joints; and
 - f. Application of surface applied or injected crack and joint sealant materials;
4. Repair of construction defects; and
5. Conformance to the liner penetration prohibitions

F. Concrete Testing:

1. A test of concrete shall include all of the following: Cylinders, Slump, Air Content and Temperature. A test shall be taken once every 100 cubic yards of concrete placed and at least one test every day 10 or more cubic yards of concrete are placed. Additional testing is required to represent new mixes and different concrete suppliers.
2. Three (3) concrete cylinders shall be taken for each 100 cubic yards of concrete placed but not less than three 3 test cylinders each day that 10 or more cubic yards are placed. Keep one of each three cylinders on the job site and allow to field cure. Within two days, deliver two of the three cylinders to a licensed testing laboratory to be cured and tested at seven 7 days and 28 days. Additional testing and cylinders are required to represent new mixes and different concrete suppliers.
3. Concrete Rebound Hammer tests may be taken after the pit is complete and at least 7 days after the concrete to be tested was poured. Concrete shall be tested according to ASTM C 805.

G. The owner shall ensure that the following information is submitted to the Design Engineer for incorporation into the construction report.

1. The name and qualifications of the inspector;
2. The name of the Concrete Contractor.



**Minnesota Pollution
Control Agency**

520 Lafayette Road North
St. Paul, MN 55155-4194

Liquid Manure Storage Area Construction Inspection Form

Feedlot Program

Doc Type: Inspection

Applicability: This form must be utilized to document construction of a liquid manure storage area (LMSA). Both the required inspector and the contractor that installed the LMSA liner must contribute information to this form. This form must be provided to the design engineer to incorporate into the final construction report. All instances of construction of a LMSA must utilize this form except for LMSAs that are concrete-lined with a capacity of 20,000 gallons or less or for those that qualify for the exemption of Minn. R. 7020.2100, subp 1, item D or E.

Return this completed form to the design engineer: The owner must submit a construction report to the Minnesota Pollution Control Agency (MPCA) or county feedlot pollution control officer within 60 days of the completion of any new or modified manure storage area. The report must be prepared and signed by the design engineer and must contain an assessment of whether the completed manure storage area conforms to the design plans and specifications submitted to the commissioner or county feedlot pollution control officer.

I. Facility Information

Name of owner(s): _____

Legal name of facility: _____

Permit number _____

Location: _____
County Township Sect. ¼ Sec. ¼ of ¼

II. Inspector's Information *(inspector must complete Parts 3 to 6 of this form)*

Name of inspector: _____

Phone: _____

Company/Agency: _____

Inspector qualifications (check all that apply):

☐ Professional engineer licensed in the state of Minnesota. License No.: _____

☐ Person working under the direct supervision of a professional engineer.

Engineer's name: _____ MN license no.: _____

☐ Natural Resources Conservation Services staff.

☐ American Concrete Institute (ACI) or Minnesota Department of Transportation (MNDOT) concrete field testing technician Grade/Level I certified and concrete field inspector Level II certified.

Note: For concrete-lined structures only.

List certificate no.: _____

III. Notifications

A. Did the owner notify the **design engineer** a minimum of three business days *prior to commencement of construction*? ☐ Yes ☐ No

Date notification given: _____
(mm/dd/yyyy)

B. Did the owner notify the **MPCA or county feedlot officer** a minimum of three business days *prior to commencement of construction*? ☐ Yes ☐ No

Date notification given: _____
(mm/dd/yyyy)

C. Did the owner notify the MPCA or county feedlot officer within three business days *following completion of the manure storage area liner*? ☐ Yes ☐ No

Date notification given: _____
(mm/dd/yyyy)

1. If a concrete-lined structure, did the owner complete the notice before the vertical walls of the concrete structure were backfilled ☐ Yes ☐ No ☐ N/A

IV. Inspection Checklist and Observations

This section (A-H, below) must be completed by the inspector listed in Part II. The liner contractor does not need to complete this section. Attach additional sheets for comments as needed.

	Yes	No	N/A
A. Were subgrade conditions adequate for liner placement, including soil texture, strength, and moisture content, and no frozen soils were present?	☐	☐	
Comments:			
B. Was a perimeter drain tile system specified in the design plans? If yes, answer Questions 1 to 4. If no, go to Question C.	☐	☐	
1. If concrete-lined, is drainage tile located a horizontal distance of at least 1 ft. outside the footing of a concrete-lined structure (unless incorporated into the form material)?	☐	☐	
2. Is a dedicated drain tile system in place for each manure storage area?	☐	☐	
3. Is a dedicated tile riser, manhole, or other access (i.e. daylight) that allows collection of tile-water samples in place and functioning for each dedicated tile system?	☐	☐	
Comments:			
C. Concrete-lined LMSAs only - Did you verify that the following items (1-7 below) were in conformance with the design engineer's plans and specifications:	☐	☐	☐
1. Reinforcing steel size, grade, spacing, cover, and that steel was free of loose rust, oil, or other debris?	☐	☐	
2. Concrete quality for air entrainment, temperature, and strength? (include test results with photocopy of laboratory results for strength)	☐	☐	
3. Handling, placement, consolidation, and finishing of concrete?	☐	☐	
4. Curing and protection of concrete after placement, including hot and cold weather protective measures?	☐	☐	
5. Location, forming, and preparation of construction and contraction/expansion joints?	☐	☐	
6. Specified product, placement, and installation of flexible waterstop materials in joints?	☐	☐	
7. Specified product and installation of surface applied or injected crack and joint sealant materials?	☐	☐	
Comments:			
D. Were there any construction defects that needed repair?	☐	☐	
If yes, describe:			
E. Were any water supply systems, fuel lines, electrical conduit, or other equipment not solely functioning as part of the manure handling or transfer system installed to penetrate the liner of the liquid storage structure?	☐	☐	
F. Was testing completed according to the methods and frequencies specified in the design engineer's quality assurance and quality control plan? (results should be forwarded to the engineer)	☐	☐	
G. Were any engineering changes or modifications made related to the liner specifications, structure location, depth, or separation distance to bedrock?	☐	☐	
If yes, complete 1 and 2 below:			
1. Describe the changes:			
2. Were these changes approved by the MPCA or county feedlot officer prior to commencement of construction of the change?	☐	☐	
H. Other comments:			

V. Inspector's Certification

I hereby certify that I am the inspector listed in Part II of this form. I hereby certify that the construction of the facilities referenced in this form were completed in accordance with all plans, specifications, reports, permit application submittals, and related communications approved by the MPCA or delegated county feedlot officer. By my signature below, I represent that the information submitted in this form is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of Inspector: _____

Date: _____

VI. Contractor's Information and Certification

Contact name: _____

Phone: _____

Liner Contractor Company: _____

Indicate type of liner installed: ☐ Earthen ☐ Concrete ☐ Steel Tank ☐ HDPE, LLDPE, or EPDM ☐ GCL (bentonite)
(Check all that apply) ☐ Other: _____

I hereby certify that I represent the liner contractor and further certify that the construction of the liner indicated above, was completed in accordance with the design plans and specifications and construction standards.

Signature of Contractor: _____

Date: _____

Second Liner Contractor (if used)

Contact name: _____

Phone: _____

Liner Contractor Company: _____

Indicate type of liner installed: ☐ Earthen ☐ Concrete ☐ Steel Tank ☐ HDPE, LLDPE, or EPDM ☐ GCL (bentonite)
(Check all that apply) ☐ Other: _____

I hereby certify that I represent the liner contractor and further certify that the construction of the liner indicated above, was completed in accordance with the design plans and specifications and construction standards.

Signature of Contractor: _____

Date: _____

OPERATION AND MAINTENANCE PLAN

A plan for operation, inspections, and maintenance of the manure storage area should be created to ensure the quality of the existing pit.

A. Pit Inspections & Maintenance:

1. Routine inspections should be made of the structure and its surroundings for leaks, deterioration of grills, slats, covers, and ladders.
 - a. Monitor the frequency of manure removal from the storage structure and note any significant fluctuations (an increase or decrease) in time between successive manure removal events.
 - b. Control the level of the liquid manure inside such that the maximum operating depth is not exceeded.
 - c. Records shall be kept explaining the type of defects, location, and repair methods. If any leaking is detected, contact your local MPCA office.
 - d. Prior to initial manure loading, consult with the design engineer to determine the need for protecting the foundation and floor slab from freezing temperatures. It may be advisable to add water to the structure to prevent frost damage. It may also be advisable to obtain, and have analyzed, a perimeter tile water sample prior to the addition of manure to the structure.

B. Perimeter Tile Inspections:

1. Routine inspections of the perimeter tile outlets and inspection manholes should be done to ensure proper operations of the tile system. Follow your MPCA / County Livestock Permit requirements for the frequency of tile inspections and testing.
 - a. The tile should be inspected for traces of manure, high flows in a dry period, broken tile, and anything else unusual.
 - b. Records should be kept on the dates the tile was inspected, methods of inspection, and what was observed. If manure is observed in the tile, contact your local MPCA office immediately.

End of Operation and Maintenance Plan

STRUCTURAL NOTES

A. General:

1. Notes and details on the structural drawings take precedence over these structural notes.
2. The contractor shall verify all dimensions, elevations, and site conditions before starting work. The engineer shall be notified of any changes.
3. In no case shall dimensions be scaled from plans, sections, or details on the structural drawings.
4. All materials and workmanship shall conform to the requirements of the following codes:
 - a. International Building Code (IBC)
 - b. Minnesota State Building Code
 - c. American Concrete Institute (ACI)
 - d. Concrete Reinforcing Steel Institute (CRSI)
Manual of Standard Practice

B. Drain Tile:

1. The drain tile shall be heavy-duty perforated polyethylene tubing 4" diameter.
2. The tile shall be covered with a washed aggregate, up to the top of the footing elevation, as shown on the plans.
2. Connect the drain tile to an existing farm tile if available, discharge to surface drainage, or drain to a sump and pump to surface.

C. Temporary Bracing and Backfill:

1. Provide temporary lateral support for all walls where grade varies on the two sides until the permanent structural support system is in place.
3. Backfill only after the floor slats or solid floor has been installed.

D. Footings and Foundations:

1. Soil bearing design value: 2500 PSF (Assumed) on virgin soil or compacted fill for footings.
2. Protect foundation excavations from frost. Do not place concrete on frozen ground.
3. Foundation excavation shall be kept free of loose material and standing water.
4. Anchor bolts shall be ½" diameter with 7" embedment and 2 ¾" projection.

E. Reinforced Concrete:

1. Concrete shall have a minimum 28-day compressive strength of $F'_c = 4000$ psi.
2. Water cement ratio shall be 0.45 maximum.
3. Cement shall conform to ASTM C150, Type I.
4. Coarse aggregate shall be ¾" Max.
5. Ready-mix concrete shall be mixed and delivered in accordance with ASTM C94.
6. Slump shall be a maximum of 6".
7. Air Content shall be between 4%-6%.
8. Concrete work shall conform to all the requirements of ACI 301.
9. Admixtures may be used with prior approval of the engineer for the purpose of increasing the workability but not to reduce the specified minimum cement content. Calcium chloride shall not be used.

F. Reinforcing Steel:

1. Bar reinforcement shall be ASTM A615, Grade 40 or 60.
2. Minimum lap splice or reinforcing bar, based on ACI 318, Class B, shall be as follows unless noted otherwise:
 - a. #3 Bars – 15"
 - b. #4 Bars – 20"
 - c. #5 Bars – 24"
 - d. #6 Bars – 30"
 - e. #7 Bars – 36"
 - f. #8 Bars – 42"

3. Reinforcing steel shall be provided with the following minimum cover unless noted otherwise:
 - a. Concrete placed against earth – 3”
 - b. Formed concrete exposed to earth or weather:
 - 1) #6 Bars through #8 Bars – 2”
 - 2) #5 Bars and smaller – 1 ½”
 - 3) Stirrups & Ties – 1 ½”
4. All reinforcing steel, anchor bolts, dowels, and inserts shall be secured in position with wire positioners, or equal, before placing concrete.
5. Dowels between footings and walls shall be the same grade, size, and spacing as vertical wall reinforcement.
6. All lap splices shall be tied at 3 locations.

G. Tolerances and Quality Control:

1. Column finish elevations shall be + or – ¼” from design elevation.
2. Wall alignment (horizontal) shall deviate no more than ¼” in 10 feet and no more than ¾” over the full length of the wall.
3. Wall bearing ledge elevations shall be + or – ¼” from design from design elevation in 10 feet and no more than ½” over the full length of the wall.
4. Overall foundation length and width dimensions and diagonal dimensions should be within ½” of plan dimensions.
5. Minor honeycombing shall be repaired on the same day that the forms are removed. Major honeycombing (greater than 1 ½” deep) shall be inspected by the engineer and repaired or removed at his direction.
6. Cracks which may extend through the concrete liner must be cleaned and sealed with MasterSeal NP1 Polyurethane Sealant, or approved equal. Larger cracks or defects may need an inspection by the engineer to determine the proper repair.
7. Test Cylinders: Take three (3) test cylinders for each 100 cubic yards of concrete placed but not less than three (3) test cylinders each day that 10 or more cubic yards are placed. Keep one of each three cylinders on the job and allow to field cure. Deliver two of the three cylinders to a licensed testing laboratory to be cured and tested at 7 days and 28 days.

H. Electrical Ground:

1. Install reinforcing bars as shown on the drawing. Verify Electrical Ground requirements with Electrical Contractor. Notify electrical inspector for inspection prior to placing concrete.

I. Cold Weather Concrete:

1. When, for more than 3 successive days, the mean daily temperature drops below 40 degrees Fahrenheit, the contractor shall place and protect the concrete in accordance with ACI 306.

J. Hot Weather Concreting:

1. When it is likely that temperatures between 75 degrees Fahrenheit and 100 degrees Fahrenheit will be approached or exceeded; that low relative humidity is present, or wind velocity will exceed 10 mph, the contractor shall place and protect the concrete in accordance with Chapter 4 & 5 of ACI 305.

K. Waterstops:

1. Waterstop can be 3/8" x 3/4" Bentonite/Butyl rubber, Equal to waterstop – RX, Ultrastop, Swellstop or a 4" ribbed with center bulb PVC Waterstop, Equal to Vinylex RCB -4316. Waterstops shall be placed in all construction joints on the floor and in the perimeter walls. Location and number of construction joints are to be determined by the contractor.

L. Fibermesh:

1. Fibermesh fibers shall be added to the concrete mix at a minimum rate of 2.0 pounds per cubic yard of concrete. The fibermesh shall be fibrillated polypropylene Olefin fibers, 3/4" in length.

CAST-IN-PLACE CONCRETE

This section includes specifications for formwork, reinforcement, accessories, cast-in-place concrete, finishing and curing.

A. Quality Assurance:

1. Construct and erect concrete formwork in accordance with ACI 301
2. Perform concrete reinforcing work in accordance with ACI Manual of Practice
3. Perform cast-in-place concrete work in accordance with ACI 318

B. Form Materials and Accessories:

1. Plywood: sound undamaged sheets with clean true edges
2. Lumber: grade as required
3. Prefabricated Steel Type: matched, tight fitting, stiffened to support weight of concrete
4. Pan Type: Steel of size and profile required
5. Tubular Column Type: Round, spirally wound laminated materials, inside surface treated with release agent, of size required
6. Form Ties: Snap-off, metal type of adjustable length
7. Form Release Agent: Colorless mineral oil which will not stain concrete or impair natural bonding characteristics of coating intended for use on concrete

C. Reinforcement Materials:

1. Reinforcing Steel: ASTM A615; deformed billet steel bars, plain finish.
2. Cement: ASTM C150, Normal-Type I Portland type.
3. Water: Clean and not detrimental to concrete.

4. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for support of reinforcing.
5. Fabricate concrete reinforcing in accordance with ACI 318 and CRSI.

D. Compounds, Hardeners and Sealer:

1. Curing Compound: ASTM C309, Type 1, Class B type by:
Master Kure by Master Builders Technologies
Super Pliocure by Euclid Chemical Company
Dress and Seal #30 by L & M Construction Chemicals
2. Absorptive Mats: ASTM C171, Burlap-Polyethylene.

E. Concrete Mix:

1. Mix and deliver concrete in accordance with ASTM C94, Alternative 2.
2. Provide concrete of the following specifications:
3. Compressive strength 4000 psi 28 day (floors, walls, piers, and footings).
4. Slump shall be a maximum of 6 inches, 9" with the use of superplasticizers. Testing should follow ASTM C 143.
5. Maximum water/cement ratio: 0.45.
6. Concrete shall be placed according to ASTM C 94 on normal temperature days with an Air Content of 4.0% to 6.0%. Samples shall be obtained and tested in accordance with ASTM C 172.
7. Concrete temperature shall be tested according to ASTM C 1064. Concrete temperature during normal daytime temperatures shall be below 90 Deg. F.

F. Formwork Erection:

1. Erect formwork, shoring and bracing to achieve design requirements.
2. Camber slabs and framing to achieve ACI 301 tolerances.
3. Provide bracing to ensure stability of formwork.
4. Apply form release agent to formwork in accordance with manufacturer's

instructions, prior to placing for accessories and reinforcement.

5. Clean forms as erection proceeds, to remove foreign matter.

G. Inserts, Embedded Components and Openings:

1. Provide formed openings where required for work to be embedded in and passing through concrete members.
2. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.
3. Install concrete accessories straight, level, and plumb.
4. Install waterstops where shown on the plan and at all pit penetrations and cold joints.

H. Reinforcement Placement:

1. Place reinforcement, supported and secured against displacement.
2. Ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings.

I. Placing Concrete:

1. Place concrete continuously between predetermined expansion, control and construction joints. Screed floors, slabs-on-grade and concrete toppings level.

J. Form Removal:

1. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads. Remove formwork progressively and in accordance with code requirements.

K. Finishing:

1. Uniformly spread, screed, and float concrete.
2. Maintain surface flatness, with maximum variation of 1/4 inch in 10 ft.

L. Curing:

1. Immediately after placement, protect concrete from premature drying.
2. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

M. Concrete Testing:

1. A test of concrete shall include all of the following: Cylinders, Slump, Air Content and Temperature. Each test shall be taken once every 100 cubic yards of concrete placed and at least one test every day 10 or more cubic yards of concrete are placed. Additional testing is required to represent new mixes and different concrete suppliers.
2. Concrete cylinders:
 - a. Take three 3 test cylinders for 100 cubic yards of concrete placed but not less than three 3 test cylinders each day that 10 or more cubic yards are placed. Keep one of each three cylinders on the job site and allow to field cure. Within two days, deliver two of the three cylinders to a licensed testing laboratory to be cured and tested at seven 7 days and 28 days. Additional testing is required to represent new mixes and different concrete suppliers.
3. Concrete Rebound Hammer:
 - a. Rebound hammer tests may be taken after the pit is complete and at least 7 days after the last concrete was poured. Concrete shall be tested according to ASTM C 805.

N. Defective Concrete:

1. Modify or replace concrete not conforming to required lines, details, elevations or strength as directed by Engineer.
2. Cracks which may extend through the concrete liner must be cleaned and sealed with MasterSeal NP1 Polyurethane Sealant, or approved equal. Larger cracks or defects may need an inspection by the Engineer to determine the proper repair.
3. Honeycombing shall be patched with a sand/grout mix or commercial patching products such as TK-Complete Concrete Patch, Meadow-Patch 5 or approved equal.

COLD WEATHER CONCRETING

- A. Cold weather is defined as a period when for more than 3 successive days the mean daily temperature drops below 40°F. When temperatures above 50°F occur during more than half of any 24-hour period, the concrete should no longer be regarded as winter concrete. Cold weather concrete shall be placed, cured, and protected according to ACI 306 COLD WEATHER CONCRETING and these abbreviated specifications taken from ACI 306 COLD WEATHER CONCRETING.
- B. Plans to protect fresh concrete from freezing and to maintain temperatures above the designated minimum for the required time after placing should be made in advance of expected freezing temperatures. Preparation for cold weather concreting consists primarily in insuring that all surfaces to be in contact with newly placed concrete are at a temperature that cannot cause early freezing or seriously delay proper curing (hardening) of the concrete. Originally, the temperature of these contact surfaces, including sub-grade materials, need not be higher than a few degrees above freezing.
- C. In moderately cold weather, when heavy frost or freezing is forecast at the job site, all unformed concrete surfaces should be protected from freezing for at least 24-hrs after it is placed.
- D. During colder weather when mean daily temperatures are generally below 40°F, concrete shall be placed at a temperature not lower than:
 - 1. 60°F when temperature is above 30°F.
 - 2. 65°F when temperature is 0°F to 30°F.
 - 3. 70°F when temperature is below 0°F.
 - 4. Maintain the placed concrete at a minimum temperature of 55°F for that time period indicated in E. below.
 - 5. Concrete should be placed at or near the lowest allowable temperature and not more than 10°F above the temperatures indicated above.

- E. **Air entrained concrete (5% to 7%) shall be used for cold weather concrete.** Footings and pit floor slabs shall be maintained at a minimum temperature of 55°F for 2 days following placement. Walls shall be maintained at a minimum temperature of 55°F for 3 days following placement.
- F. Heated enclosures, if used, must be strong, windproof, and weatherproof. Heating units should be vented and not permitted to heat or dry the concrete locally.
- G. Generally, the outline below should be followed:
1. Never place concrete on frozen ground or on snow or ice.
 2. Supply the concrete mix at a temperature in accordance with D. above but not less than 55°F.
 3. After placement of the concrete mix, keep the concrete at a temperature of 55°F for 2 days (floors and footings) and 3 days (walls) by the use of insulated blankets, straw, or the use of properly applied heat. Leave forms in-place during these days.
 4. Be particularly concerned with thin concrete, edges, and openings that will be exposed to wind or drafts.
 5. Have the necessary insulating material on site before placement of concrete when cold weather is likely to occur.

HOT WEATHER CONCRETING

Hot Weather is defined as any combination of high air temperature, low relative humidity, and wind velocity tending to impair the quality of fresh or hardened concrete or otherwise resulting in abnormal properties. When any of these conditions are present, the contractor shall place and protect the concrete in accordance with Chapter 4 of ACI 305 as described below:

4.1 General

- 4.1.1** The requirements for good results in hot weather concrete placing and curing is no different than in other seasons. The same necessities exist:
- a.** That concrete be handled and transported with a minimum of segregation and slump loss.
 - b.** That concrete is placed where it is to remain.
 - c.** That the concrete be placed in layers shallow enough to assure vibration well into the layer below.
 - d.** That joints be made on sound, clean concrete.
 - e.** That finishing operations and their timing be guided only by the readiness of the concrete for them, and nothing else.
 - f.** That curing be conducted in such a manner that at no time during the prescribed period will the concrete lack ample moisture and temperature control, so that hydration continues to develop the full potential of strength and durability of the concrete.

4.2 Preparations for placing and curing

4.2.1 Preparations for placing and curing in hot weather include recognition at the start of work that certain abnormal conditions will exist which will require some items of preparation that cannot readily be provided the last minute before concrete is placed. If concrete temperatures as placed are expected to be abnormally high, preparation must be made to transport, place, consolidate, and finish the concrete at the fastest possible rate.

4.2.1.1 This means, first, delivery of concrete to the job must be scheduled so it will be placed promptly on arrival, particularly the first batch. Many concrete operations get off to a bad start because concrete was ordered before the job was ready and slump control was lost at this most critical time.

4.2.1.2 Equipment for placing the concrete must have adequate capacity to perform its functions efficiently so there will be no delays at distant portions of the work. There should be ample vibration equipment and manpower to consolidate the concrete quickly after placement and to maintain the rate of

placement in difficult areas. All equipment should be in first class operating condition. Breakdowns or delays that stop or slow the placement can seriously affect the quality of the work. Cold joints may be apparent when forms are removed; vibration failure can cause obvious lack of consolidation.

4.2.1.3 Due to more rapid slump loss in hot weather, the strain on vibrating equipment will be greater. Accordingly, provision should be made for an ample number of standby vibrators, at least one standby for each three vibrators in use. A concrete placing operation is in serious trouble, especially in hot weather, when vibration equipment fails and the standby equipment is inadequate. If possible, arrangements should be made in advance to secure another crane or pump quickly, in event of an equipment breakdown.

4.2.2 When there is to be flatwork on grade, early planning may make it feasible to plan a temporary windbreak or provide shade. In any event, the job should be equipped with ample water supply hose. The subgrade should be moist but free of standing water and soft spots at the time of concreting. Fogging can be used to cool and moisten surrounding air to prevent excessive evaporation from flatwork during finishing. Fog nozzles for this use should produce a fog blanket and they should not be confused with the common garden hose nozzles, which produce an excessive washing spray.

4.2.3 Preparation for placing includes proper location and preparation of construction joints. In hot weather, due to faster setting and hardening of the concrete, the timing of clean up by various methods, such as green cutting or surface retardant application, becomes more critical. Preparation must be made for prompt and adequate attention to these matters at the right time.

4.2.4 Work plans should include preparation to limit the temperature of concrete as placed. As the selected limiting temperature, usually but not always between 75 F (24C) and 100 F (38C) is approached and exceeded, it is increasingly likely that the unfavorable effects of high temperature will occur.

4.2.4.1 Whatever temperature limitation is considered worthwhile can be maintained to best advantage if mixers, belts, pump lines, and chutes are shaded. Where they cannot be shaded, they will absorb appreciably less heat from the sun if painted white and kept white. Pump lines and other surfaces can be kept appreciably cooler by covering them with damp burlap, kept damp with soil soaker hose. When daytime temperature and drying conditions may be critical, scheduling concrete placement to begin in the late afternoon will materially improve placing conditions. On massive slabs and pavements this has been found to result in much less thermal shrinkage and cracking. Concrete placed during the early morning may attain an undesirably high temperature, particularly during the middle of the day, when the maximum sun radiation and heat of hydration occur. Such concrete could subsequently be exposed to severe thermal stress on cooling.

4.2.5 Finally, preparation for placing concrete in hot weather includes the special provisions necessary for its proper protection and curing, since hot weather causes rapid drying. To avoid serious damage and cracking, facilities must be ready to protect promptly all exposed surfaces from drying. Water curing is much to be preferred for most concrete work, but it is recognized that prompt application of white-pigmented curing compound (ASTM C309) Type 2, is more practical for curing vast areas of flatwork on subgrade. Other alternatives for curing are described in ACI 308. Water curing must be continuous and the continuity of water curing is best assured if provision is made for covering all exposed surfaces, vertical, horizontal, and otherwise, with saturated material (burlap, cotton mats, old carpets, etc.) kept wet with soil soaker hose. This material should be kept in direct contact with the concrete surface at all times. Alternate cycles of wetting and drying promote the development of pattern cracking, and should be avoided. Curing water should not be much colder than the concrete because of temperature change stresses, which could be introduced with resultant cracking.

4.3 Placement and Finishing

4.3.1 Speed-up of placement and finishing materially reduces hot weather difficulties. Delays increase slump loss and invite the addition of water to offset it. Each operation in concrete finishing should be carried out promptly when the concrete is ready for it. It is necessary to make sure that concrete is not placed in the forms faster than it can be properly consolidated by men and equipment, or be properly finished by the men at hand. If the placing rate is not coordinated with available men and equipment, a job will soon be marked with cold joints, poor consolidation, and irregular surface finishes.

4.3.2 Regardless of the thickness of layers of concrete as placed under normal temperatures, each layer may have to be shallower in hot weather to assure coverage of the previous layer while it will still respond readily to vibration. The interval between monolithic wall and deck placements (to let the wall concrete develop its settlement shrinkage) becomes very short in hot weather, especially with warm concrete.

4.3.3 In placing beam and deck concrete, it is necessary in hot weather to keep the operation confined to a small area and to proceed on a front having a minimum amount of exposed surface to which concrete is to be added. A fog nozzle should be used generously to cool the air, to cool the forms and steel immediately ahead, and to lessen rapid evaporation from the concrete surface before and after each finishing operation. Excessive fog spraying (that which would wash the fresh concrete surface or cause water to stand on the surface during floating or troweling) must be avoided.

4.3.3.1 Without such fog spray between the finishing operations in hot weather, particularly if it is windy and humidity is low, water may be evaporated from the surface faster than it will rise naturally to the surface. This will create a growing tension in the surface, which often causes irregular, plastic-shrinkage cracking. Careful use of the fog spray previously mentioned, spreading and removing polyethylene sheeting between finishing operations, or application of monomolecular films after the strike-off, are recommended. Sometimes in relatively massive placement, revibration prior to floating will prevent the development of plastic-shrinkage cracking. When such cracking occurs prior to the final set, the cracks can be closed by striking the surface on each side of the crack with a float. It serves no lasting purpose to merely trowel slurry over them.

4.3.4 In summary, for best assurance of good results with concrete placing in hot weather, the initial concrete placement temperature should be limited to preferably between 75F (24C) and 100F (38C) as discussed in Sections 2.2.2 and 4.2.4. Every effort should be made to keep the concrete temperature uniform. All necessary precautions should be taken to see that concrete is promptly placed on arrival at the job and immediately vibrated after placement. Flatwork should be protected from excessive drying during finishing operations, and each operation should be performed without delay as soon as the concrete is ready for it. Under extreme conditions of high ambient temperature, exposure to direct rays of the sun, low relative humidity, and wind – perhaps aggravated by a slow rate of placement due to complexity of the structure in size and shape – careful and complete adherence to the foregoing practices may not produce the degree of quality desired for the work. Under such circumstances, it has been found worthwhile to restrict concrete placement to late afternoon or evening.

4.4 Curing and Protection

4.4.1 Curing and protection have been largely covered under Section 4.2. It should be emphasized that in hot weather there is great need for continuous curing, preferably by water. The need is greatest during the first few hours, and in fact throughout the first day after concrete is placed. All surfaces should be protected from drying, even intermittently, as this contributes to development of pattern cracking.

4.4.2 For water containment structures absorptive wood forms remaining in place should not be considered as a satisfactory means of curing in hot, drying weather. Forms should be covered and kept moist. The forms should be loosened, as soon as this can be done without damage to the concrete, and provisions made for the curing water to run down inside them. During form removal, care should be taken to provide wet cover to newly exposed surfaces to avoid exposure to hot sun and wind. Form tie cone holes can be filled and any necessary repairs made by uncovering a small portion at a time as necessary to carry on this work. These repairs should be completed in the first few days after stripping, so the repairs and

cone hole fillings can cure with the surrounding concrete. At the end of the prescribed curing period (7 days minimum; 10 is better), the coverage should be left in place without wetting for several (4 days suggested), so that the concrete surface will dry slowly and be less subject to surface shrinkage cracking. The effects of drying are further minimized by closing such structures as tunnels and pipelines against drafts and free circulation of drying air.

4.4.3 In summary, providing proper temperature and moisture conditions for curing of concrete are much more critical and important in hot weather than under normal temperatures. It is, therefore, of first importance that curing be promptly commenced, ample in coverage, and continued without interruption.

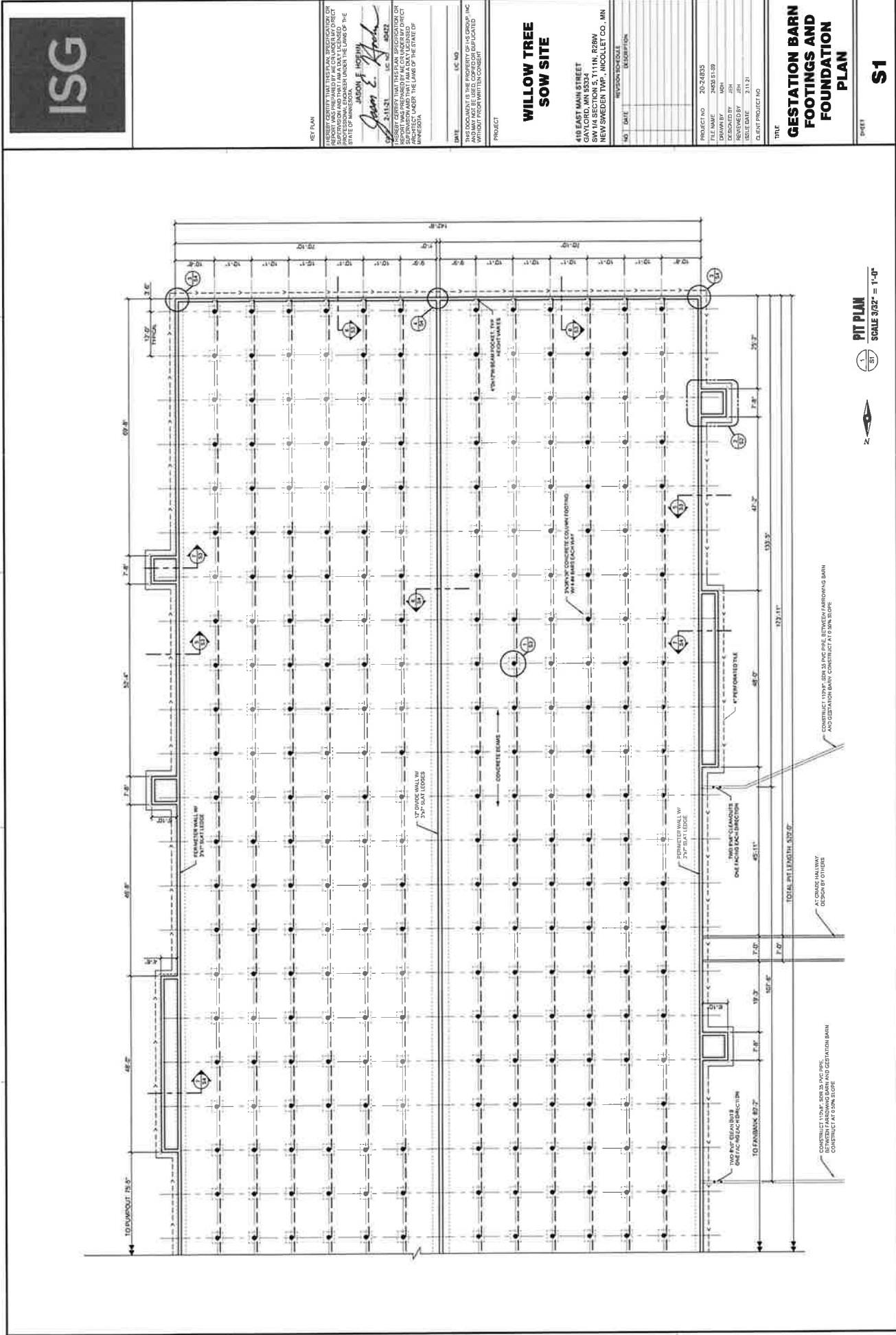


SCALE: 1"=1000'

S1	GESTATION BARN - FOOTINGS & FOUNDATION PLAN
S2	GESTATION BARN - FOOTINGS & FOUNDATION PLAN
S3	GESTATION BARN - FOOTINGS & FOUNDATION PLAN
S4	GESTATION BARN - DETAILS
S5	GESTATION BARN - ROOF STRUCTURE DETAILS
S6	GESTATION BARN - ROOF STRUCTURE SPECIFICATION
S7	FARROWING BARN - FOOTINGS & FOUNDATION PLAN
S8	FARROWING BARN - PULL PLUG LAYOUT
S9	FARROWING BARN - DETAILS
S10	FARROWING BARN - DETAILS
S11	FARROWING BARN - DETAILS

4336

PROJECT MANAGER - MATT HUDSON
503.247.1570



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DATE: 5-11-21
LIC. NO.: 04022

JASON E. HOUGH

THIS REPORT WAS PREPARED BY A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PROJECT: WILLOW TREE SOW SITE

410 EAST MAIN STREET
GAYLORD, MN 55334
SW 1/4 SECTION 5, T11N, R28W
NEW SPRETT TWP., INCOLETT CO., MN

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PROJ. NO.: 20-24033
PROJ. NAME: WILLOW TREE SOW SITE
DRAWN BY: JEH
DESIGNED BY: JEH
REVIEWED BY: JEH
ISSUE DATE: 5-11-21
CLIENT PROJECT NO.: 21121

THE

**GESTATION BARN
FOOTINGS AND
FOUNDATION
PLAN**

SHEET

S1

PT PLAN
SCALE 3/32" = 1'-0"



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DATE: 11/11/14
PROJECT: WILLOW TREE SOW SITE
410 EAST MAIN STREET
GAYLORD, MN 55334
SW 1/4 SECTION 5, T111N, R28W
NEW SWEDEN TWP., NICOLLET CO., MN

DESIGNED BY: JEH
CHECKED BY: JEH
ISSUE DATE: 11/11/14
CLIENT PROJECT NO: 1401

KEY PLAN

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DATE: 11/11/14
PROJECT: WILLOW TREE SOW SITE
410 EAST MAIN STREET
GAYLORD, MN 55334
SW 1/4 SECTION 5, T111N, R28W
NEW SWEDEN TWP., NICOLLET CO., MN

DESIGNED BY: JEH
CHECKED BY: JEH
ISSUE DATE: 11/11/14
CLIENT PROJECT NO: 1401

WILLOW TREE SOW SITE

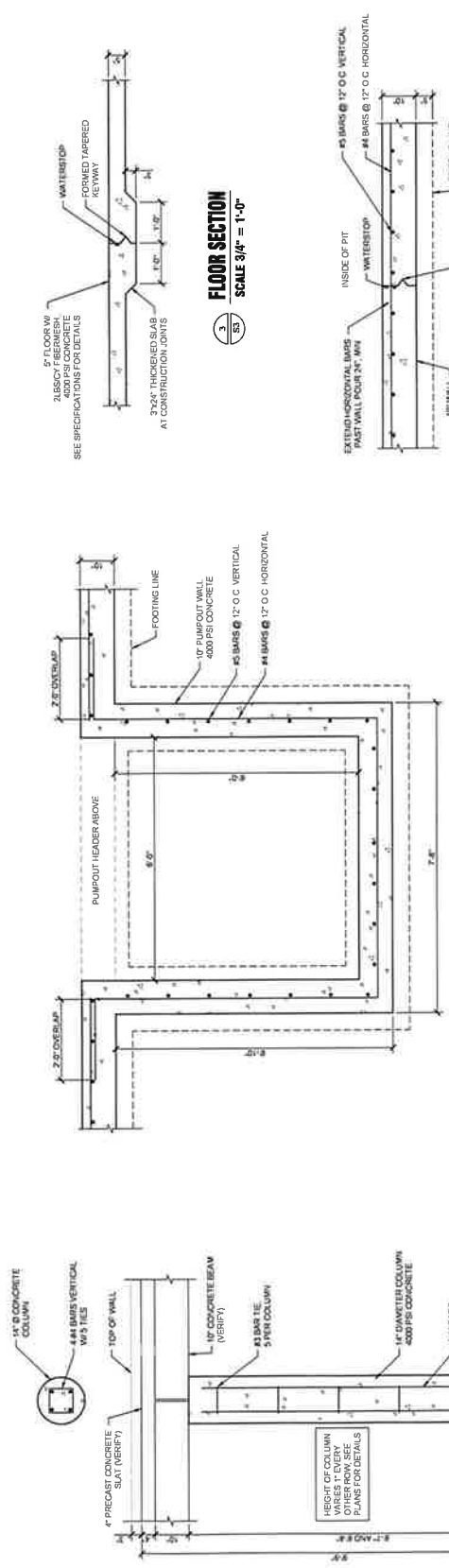
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GAYLORD, MN 55334
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NO.	DATE	REVISION/DESCRIPTION
1	11/11/14	ISSUE FOR PERMIT

PROJECT NO.	1401
FILE NAME	1401_1.dwg
DRAWN BY	JEH
DESIGNED BY	JEH
CHECKED BY	JEH
ISSUE DATE	11/11/14
CLIENT PROJECT NO.	1401

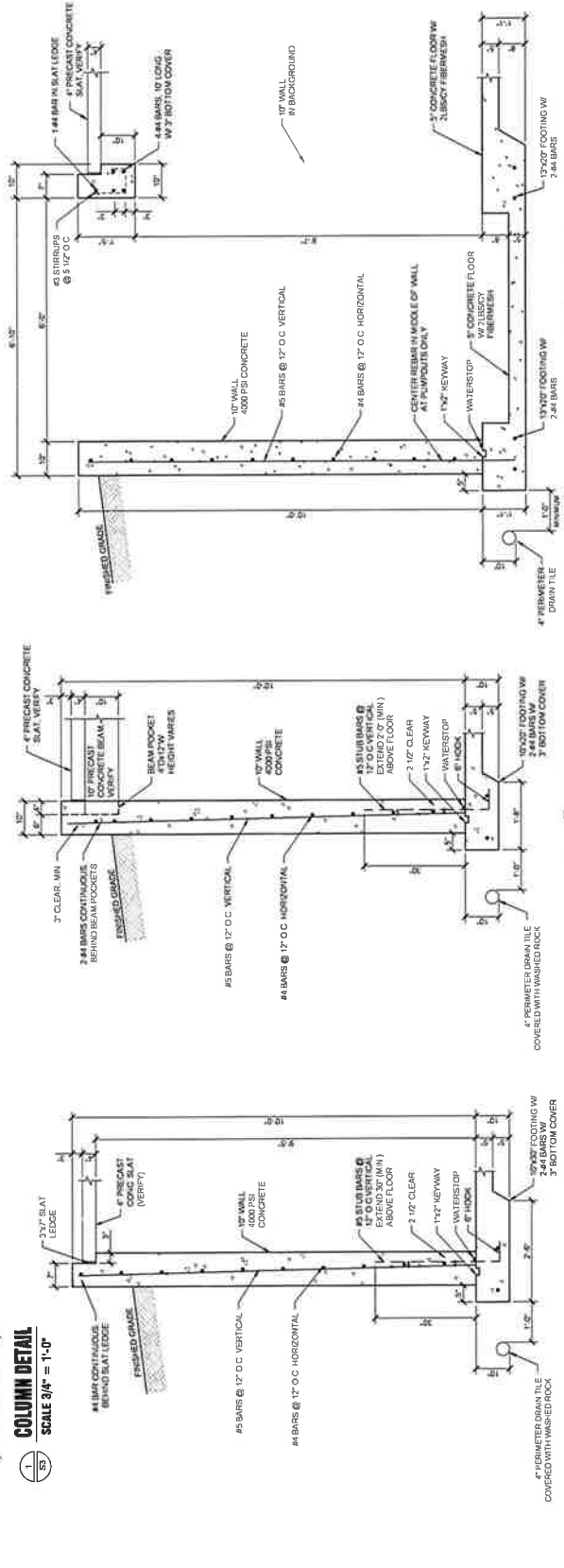
GESTATION BARN DETAILS

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FLOOR SECTION
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PUMPOUT DETAIL
SCALE 3/4\"/>



COLUMN DETAIL
SCALE 3/4\"/>

SIDEWALL DETAIL
SCALE 3/4\"/>

ENDWALL DETAIL
SCALE 3/4\"/>

PUMPOUT DETAIL
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Jason E. Hohn
 JASON E. HOHN
 LIC. NO. 00422
 2-11-21

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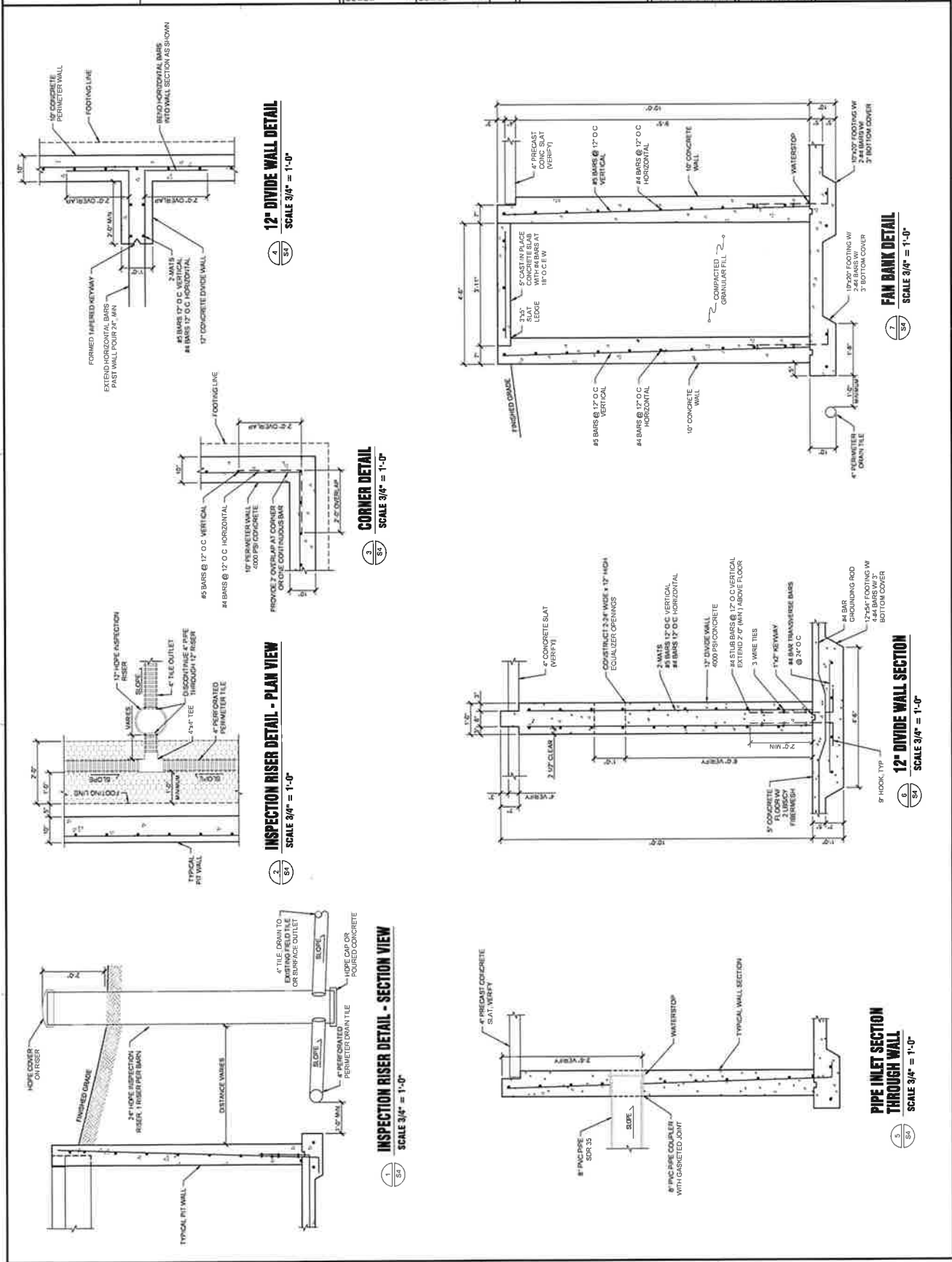
WILLOW TREE SOW SITE

410 EAST MAIN STREET
 GAYLORD, MN 55334
 SW 1/4 SECTION 5, T11N, R28W
 NEW SWEDEN TWP., NICOLLET CO., MN

PROJECT NO. 20-24855
 DATE 10/25/21
 DRAWN BY JPH
 REVIEWED BY JPH
 DATE 11/11/21
 CLIENT PROJECT NO.

GESTATION BARN DETAILS

SHEET **S4**





KEY PLAN

THIS REPORT WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MINNESOTA.

JASON E. HORN

DATE: 10/21/21

PROJECT: 211-21

LOCATION: 410 EAST MAIN STREET, CAYLOR, MN 55334, SW 1/4 SECTION 5, T11N, R28W, NEW SWEDEN TWP., NICOLET CO., MN

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WILLOW TREE SOW SITE

410 EAST MAIN STREET
CAYLOR, MN 55334
SW 1/4 SECTION 5, T11N, R28W
NEW SWEDEN TWP., NICOLET CO., MN

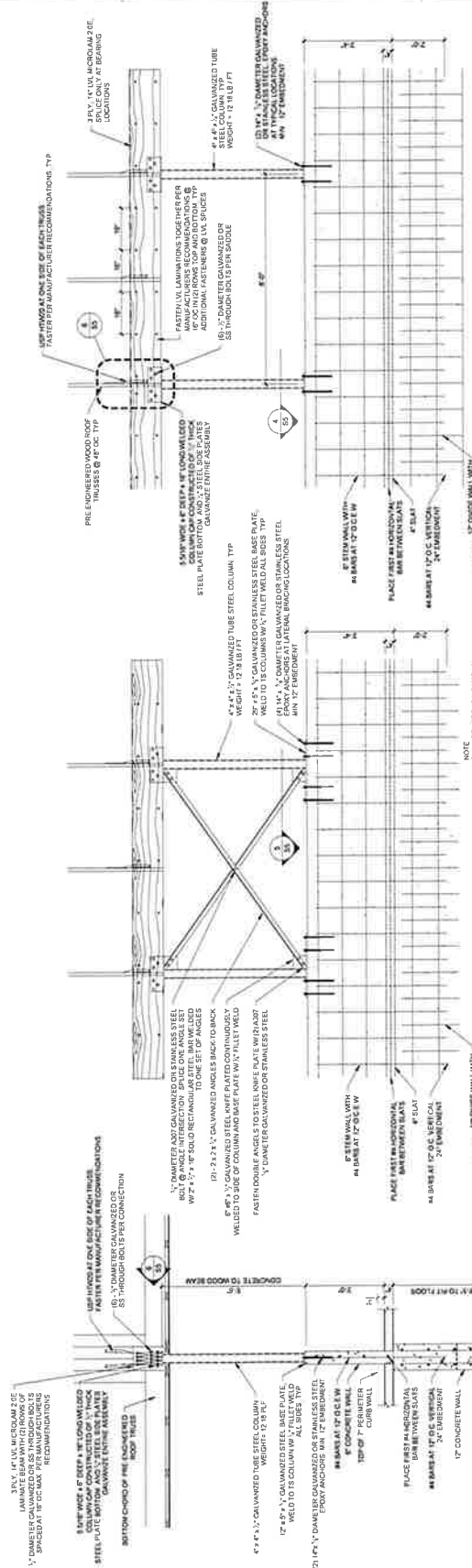
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PROJECT NO.	20-2-003
FILE NAME	20-2-003 STRUCTURAL
DRAWN BY	MDK
DESIGNED BY	JSH
REVIEWED BY	JSH
ISSUE DATE	10/21/21
CLIENT PROJECT NO.	

GESTATION BARN ROOF BEAM DETAILS

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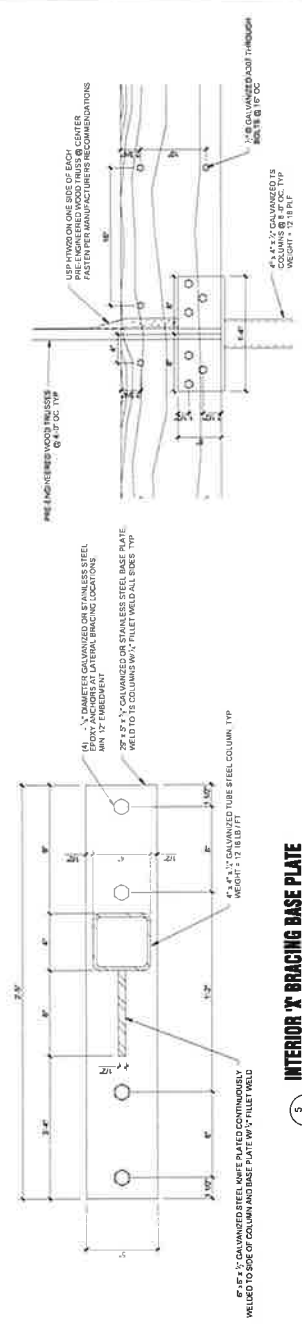
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INTERIOR SUPPORT BEAM ELEVATION
SCALE 1/2" = 1'-0"

INTERIOR 'X' BRACING SECTION
SCALE 1/4" = 1'-0"

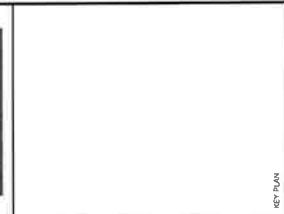
INTERIOR WALL SECTION
SCALE 1/2" = 1'-0"



INTERIOR BASE PLATE DETAIL
SCALE 3" = 1'-0"

INTERIOR 'X' BRACING BASE PLATE
SCALE 3" = 1'-0"

CONNECTION DETAIL
SCALE 1/2" = 1'-0"



I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR
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 SUPERVISION AND THAT I AM A DULY LICENSED
 PROFESSIONAL ENGINEER UNDER THE LAWS OF THE
 STATE OF WISCONSIN.

JASON F. HOEHL
Jason E. Hoehl
 2-15-21 IC NO. 49427

410 EAST MAIN STREET
GAYLORD, MN 55334
SW 1/4 SECTION 5, T111N, R28W
NEW SWEDEN TWP., NICOLLET CO., MN

REVISION SCHEDULE		DESCRIPTION
NO	DATE	MAZE RECONSTRUCTION 2nd version
1	2/15/31	

PROJECT NO	70-24855
FILE NAME	24855 S1-S9
DRAWN BY	NDH
CHECKED BY	JH
REVIEWED BY	JH
ISSUE DATE	3/11/21
CLIENT PROJECT NO	

FARROWING BARN FOOTINGS LAYOUT

54021

\$7





I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR
 REPORT WAS PREPARED BY ME OR UNDER MY DIRECT
 SUPERVISION AND THAT I AM A DULY LICENSED
 PROFESSIONAL ENGINEER UNDER THE LAWS OF THE
 STATE OF MINNESOTA.

JASON F. HOEHL
Jason E. Hoehl
 3-15-21 UIC NO. 40422

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR
 REPORT WAS PREPARED BY ME OR UNDER MY DIRECT
 SUPERVISION AND THAT I AM A DULY LICENSED
 PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF
 MINNESOTA.

DATE _____ NC NO _____

**WILLOW TREE
SOW SITE**

410 EAST MAIN STREET
GAYLORD, MN 55334
SW 1/4 SECTION 5, T11N, R28W
NEW SWEDEN TWP, NICOLLET CO., MN

REVISION SHEET		
NO.	DATE	DESCRIPTION
1	2-15-21	MADE FAREWELL TO BARN ZIMMER

PROJECT NO	20-24035
FILE NAME	24835 SI-S9
DRAWN BY	MDH
DESIGNED BY	JEH
REVIEWED BY	JEH
ISSUE DATE	2 11 21
CLIENT PROJECT NO	

FARROWING BARN PULL PLUG LAYOUT

85



PIT PLAN - PULL PLUGS

SCALE 1/16" = 1'-0"

ISG

KEY PLAN
THIS DOCUMENT IS THE PROPERTY OF HSG GROUP, INC. AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT WRITTEN CONSENT.
DATE: 10/15/21
PROJECT: WILLOW TREE SOW SITE
DRAWN BY: JASON E. HOSHY
CHECKED BY: JASON E. HOSHY
REVIEWED BY: JASON E. HOSHY
ISSUED DATE: 10/15/21
CLIENT PROJECT NO: 20-24025

WILLOW TREE SOW SITE

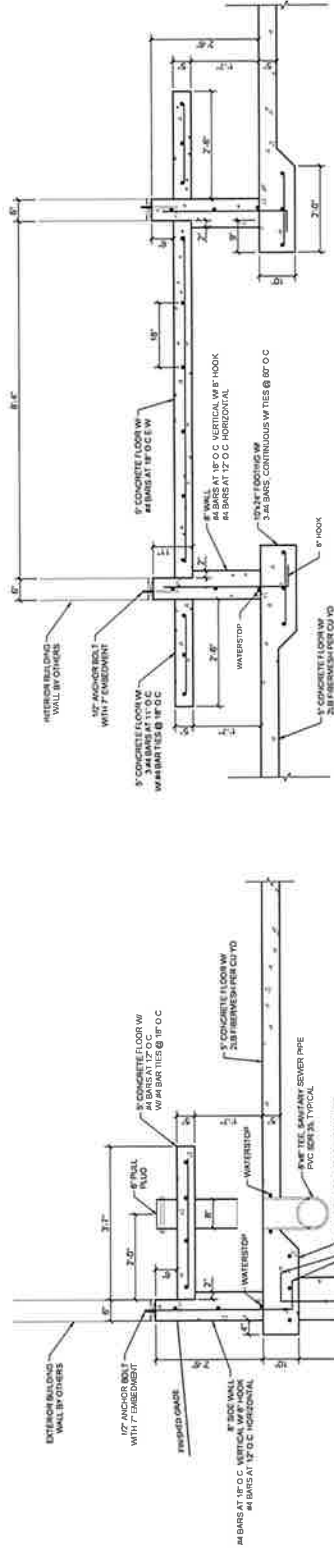
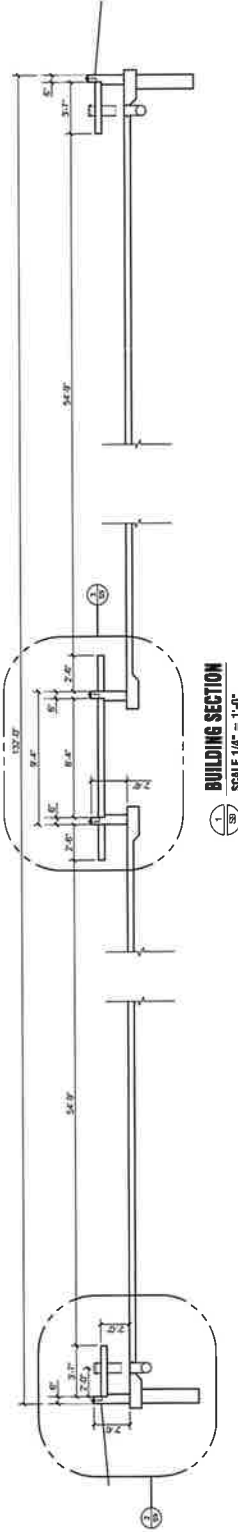
#10 EAST MAIN STREET
GAYLORD, MN 55334
SW 1/4 SECTION 2, T11N, R2W
NEW SWEDEN TWP., NICOLLET CO., MN

REVISION SCHEDULE
NO. 1 DATE 10/15/21
NO. 2 DATE 10/15/21
NO. 3 DATE 10/15/21

PROJECT NO: 20-24025
DATE: 10/15/21
DRAWN BY: JASON E. HOSHY
CHECKED BY: JASON E. HOSHY
REVIEWED BY: JASON E. HOSHY
ISSUED DATE: 10/15/21
CLIENT PROJECT NO: 20-24025

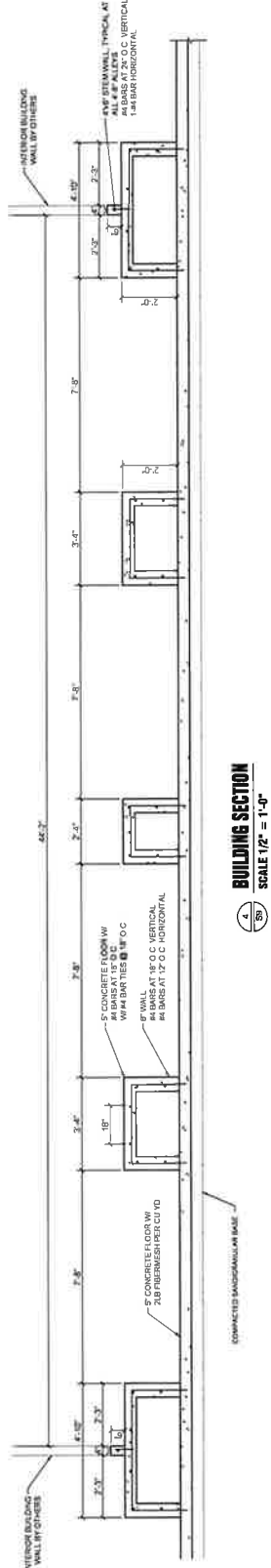
FARROWING BARN DETAILS

S9



SIDEWALL SECTION

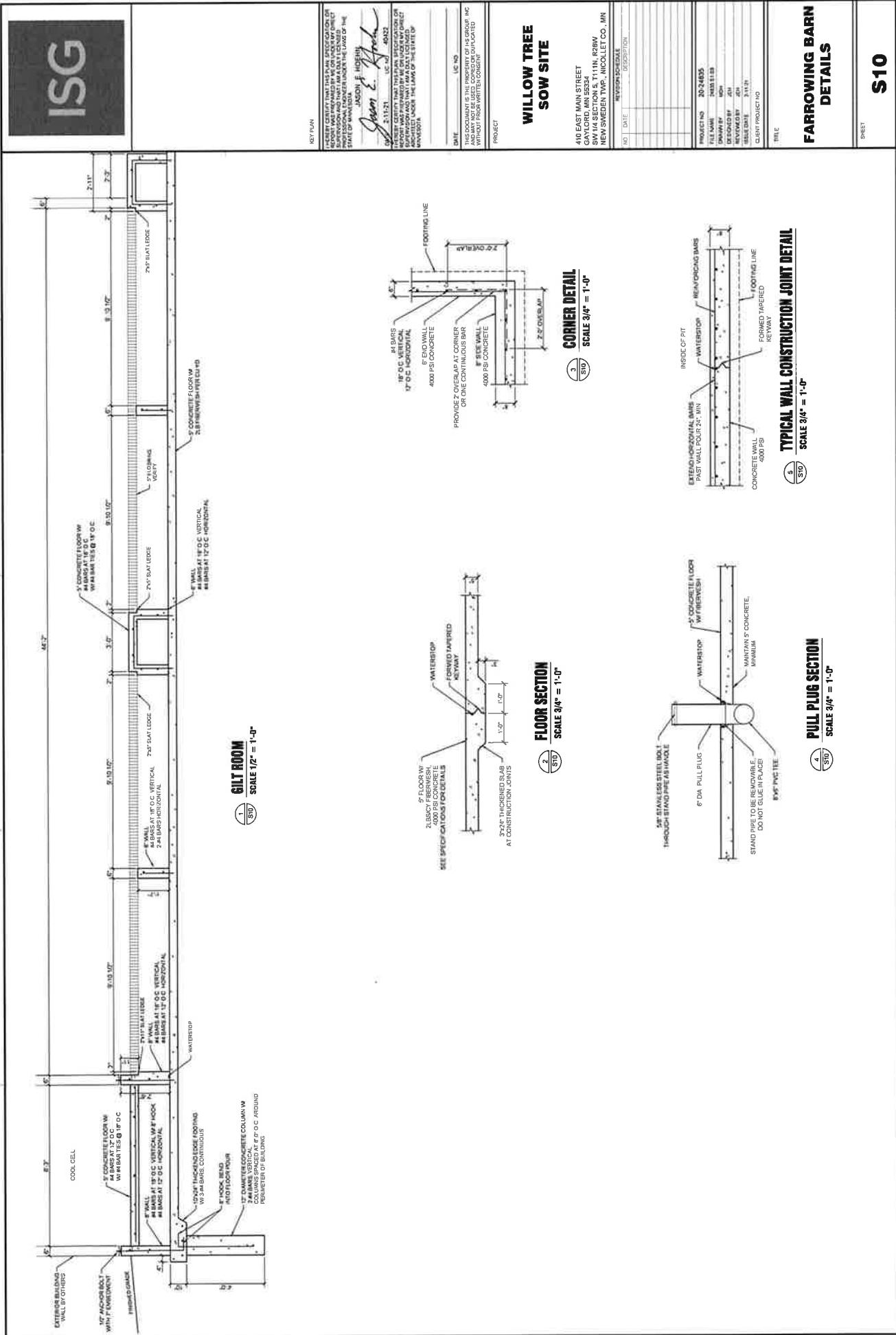
SCALE 3/4" = 1'-0"



BUILDING SECTION

SCALE 1/2" = 1'-0"

SHEET



2/19/2021
 Willow Tree
 Proposed NICO-CSF0393
 06-05-100-001
 Dairy 21 au Beef 30.8 au to be eliminated; Proposed Swine breeding site 979.2 AU

Odor From Feedlots Setback Estimation Tool (OFFSET)

	width (ft)	length (ft)	# of source	Odor emission #	Odor control factor	Odor emission factor
Source 1	60	90	0	6	1	0.00
Source 2	55	70	0	6	1	0.00
Source 3	121	121	0	4	1	0.00
Source 4	132	330	1	14	1	60.98
Source 5	143	520	1	50	1	371.80
Source 6						0.00
Source 7						0.00

Total odor emission factor

432.78

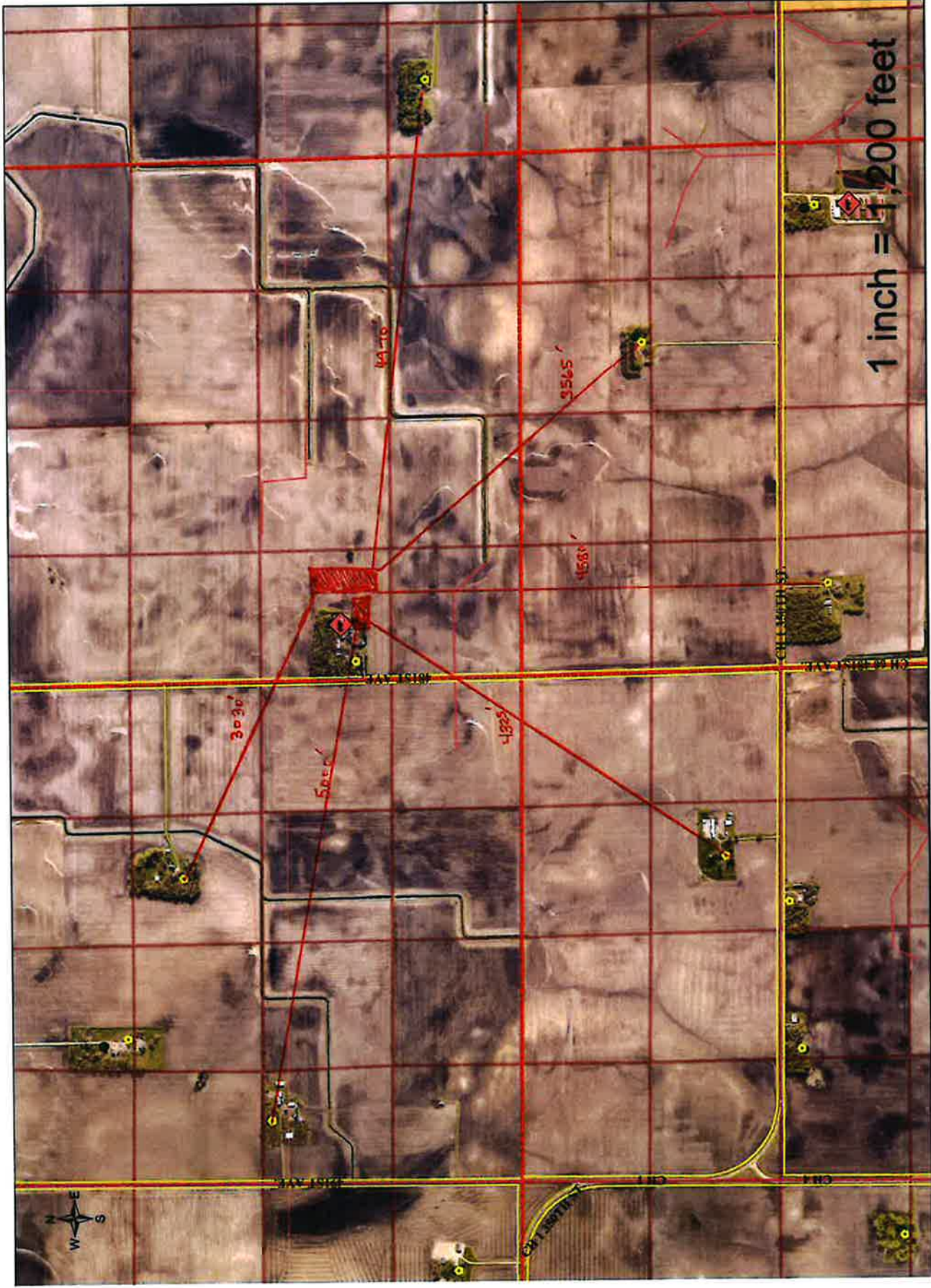
Distance to nearest non accessory dwelling

3030' to NW
5000' to W
4325' to SW
4580' to S
3565' to SE
4970' to E

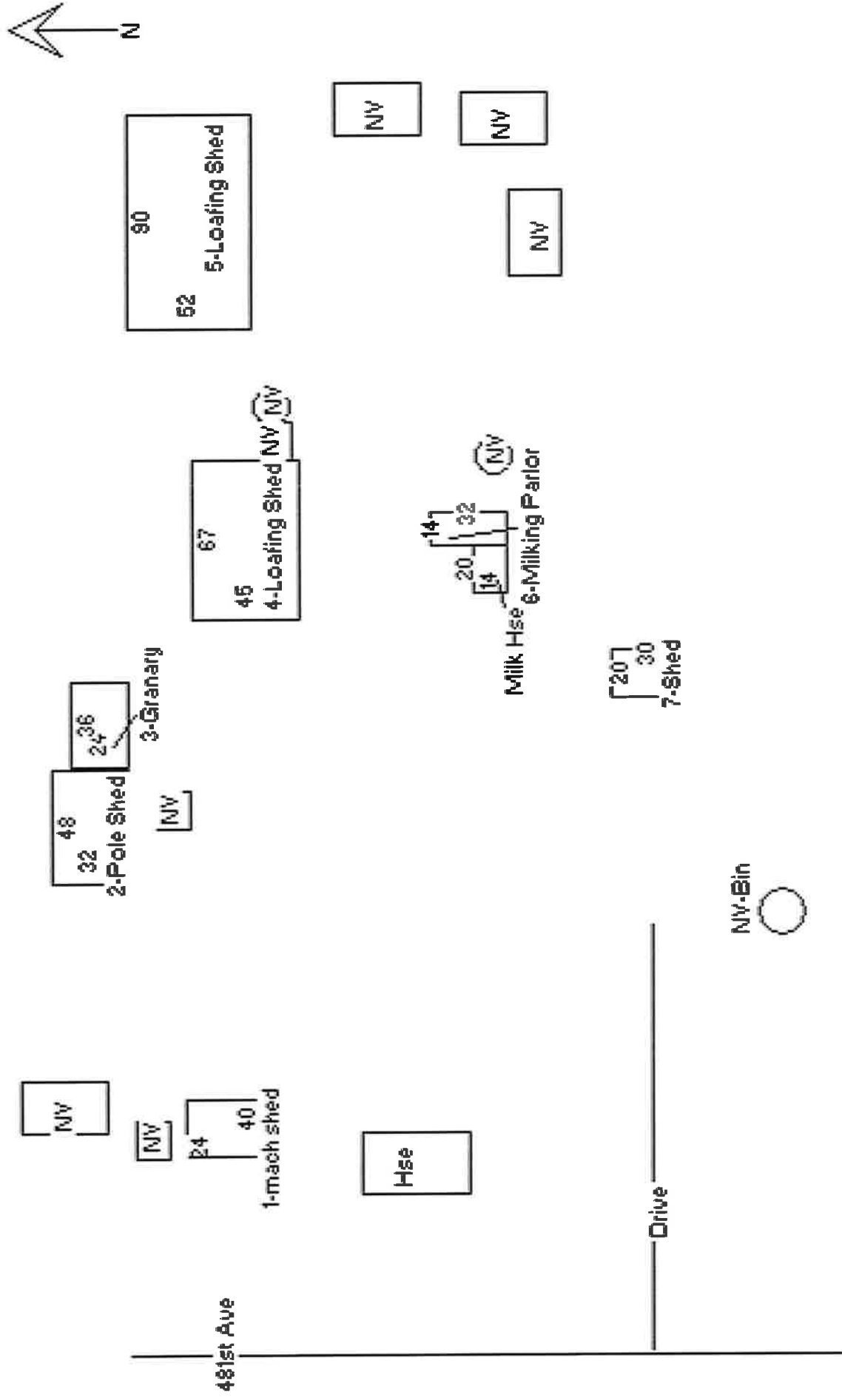
Annoyance free level	Setbacks (feet)	Setbacks (mile)
99%	14054.59	2.66
98%	8696.54	1.65
97%	5577.02	1.06
96%	4436.97	0.84
94%	3175.61	0.60
93%	2908.35	0.55
91%	2389.55	0.45

Note: Frequencies 99%, 98%, 97%, 96%, 95%, 93% are equivalent to 14, 22, 36, 50 hrs./mo, respectively

ATTACHMENT G
 OFFSET Model



Disclaimer: The information herein is intended to be a true representation of available records. However, there is no guarantee to the user as to the accuracy, suitability or reliability of this data for any purpose. Property Services Department of Nicollet County assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data.



Sketch by www.camavision.com

ATTACHMENT H Assessor Diagram

February 2021



Permit Form

RECORD ID	RECORD TYPE	DESCRIPTION	ADDRESS	OWNER NAME
BLD21-00019	Structure Permit	Construct a three-bedroom single family dwelling with finished basement and attached three-stall garage. Square footage: dwelling is 1,842 sf; porch is 208 sf; screened porch is 262 sf; and the garage is 1,121 sf. Total footprint of 3,433 sf. Structure to be built by homeowner. Property owner waiver is attached. See attachments for list of subcontractors. CONDITIONS: 1) Bluff and bluff setback areas shall remain in their natural condition. Vegetation must be maintained. 2) Development must adhere to all applicable Wetland Conservation Act standards and requirements.	0	HENKELS LINDSAY & TOBY HENKELS
BLD21-00020	Structure Permit	Construct a 50' x 72' (3,600 sf) pole shed for personal storage. Dirt floor. No insulation.	44897 380TH ST NICOLLET, MN 56074	OLSEN ANDREW M & BRIDGET J OLSEN
BLD21-00021	Sign Permit	Mailbox support, 911 address and sign, and post.	1550 15th AVE Lafayette, MN 56054	PLATZ ERIC P
BLD21-00022	Structure Permit	Construct a 40' x 40' (1,600 sf) personal shop building. Shop will be heated and have a bathroom. Septic design submitted. Contractor Tim Nytes, license number 713485. Applicant will do the plumbing. Estimated completion date is 11/30/21.	36134 403RD AVE ST PETER, MN 56082	NYTES DANIEL & MEGAN NYTES
BLD21-00023	Structure Permit	To construct a grain bin. Contractor is UFC. Cost is approx. \$40,000. Diameter of 30'. Capacity of 14, 800 bu. Completion date end of September 2021.	36007 605TH AVE GIBBON, MN 55335	STADTHERR TINA M
BLD21-00024	Structure Permit	To construct a 28' x 65' (1,820 sf) basement under an existing single family dwelling. There will be a 13' x 14' (182 sf) entrance with stairs. Total footprint size is 2,002 sf. Basement to have two bathrooms, one bedroom, one storage area, and a family room. Septic compliant. General contractor is applicant. Floodplain elevation verified by Bolton & Menk. 1% floodplain elevation is 757' and lowest floor elevation is 758.7'.	37302 345TH LN ST PETER, MN 56082	RETTIG RODNEY W
BLD21-00025	Structure Permit	To construct a replacement dwelling (1386 sf) with attached garage (676 sf). Total footprint of 2,062 sf. Three bedrooms on main floor. No bedrooms in basement. Basement will be finished. Applicant serving as general contractor. Septic design submitted and approved. Existing dwelling must be removed within one year of occupying replacement dwelling.	37283 348TH ST LE SUEUR, MN 56058	REGENSCHEID GLEN J REVOCABLE TRUST
BLD21-00026	Structure Permit	Construct a grain bin. Contractor is self. Storage capacity of 11,642 bu. Diameter of 24 feet. Estimated completion date of 9/1/21.	35532 545TH AVE LAFAYETTE, MN 56054	THORESON JON S